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FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—Washington.

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March.

"Be patient swains; these cruel-seeming winds
Blow not in vain. Far hence they keep repressed
Those deep'ning clouds on clouds surcharged with rain,
That, o'er the vast Atlantic hither borne
In endless train, would quench the Summer-blaze,
And, cheerless, drown the crude, unripened year.
The North-east spends his rage; he now shut up
Within his iron cave, the effusive South
Warms the wide air, and o'er the void of heaven
Breathes the big clouds with vernal showers distent."

Thomson.

March is a conflict between the winds of the North and the South, and in this respect the climate of America at this season bears a close resemblance to that of Britain. The same Gulf Stream that flows along our coast, producing such marked changes in our temperature, sweeps the Western shores of Ireland and England, carrying the heat of tropical seas, and the floating wrecks of tropical lands, thousands of miles toward the poles. The Laplander cooks his reindeer steak, and boils his tea kettle, if he indulges in that luxury, with the palms that were floated out into the Caribbean sea. As we are nearer to the tropics, and the Gulf Stream has a higher temperature, and as our northerly winds come over snow clad lands, we have greater alternations of heat and cold in Spring, than are known in England. These sudden changes are the characteristic features of this month. To-day we have the wind from beyond the great lakes, and the thermometer goes down to the neighborhood of zero. To-morrow it comes from the warm South, bearing rain laden clouds, and the balmy air of the Mexican Gulf. Now we have fierce snow storms and pinching frosts, and it would seem that winter had resumed his iron sway. Again the snows dissolve, the banks disappear from under the walls, and in sheltered nooks the grass lifts its green spires above the withered vegetation of the old year.

Nothing can be more charming than these first indications of Spring, after the long and dreary Winter. The notes of the blue bird are heard in the orchard, and he is seen peeping into the knot hole, that he occupied in the Summer. A stray robin is seen hopping on the meadow in search of grubs. What lands have they visited while their old haunts have been wrapped in snow? The wild geese fly overhead in long wedge shaped flocks, seeking their breeding places on the coast of Labrador, and further north. This is a sign, universally accepted, that winter is broken. The unerring instinct of the bird does not push northward, until certain of finding a congenial clime for laying its eggs and for brooding. The ducks are disappearing from the bays and inlets along the shore, and seeking by easy flight, the same northern retreats. They know their appointed season.

And among domestic animals there are cheering indications of Spring. It will soon be yeaning time with the flocks and herds, and the boys and girls will be rejoicing over the calves and lambs, that so suddenly and mysteriously make their appearance in the yard. Though all is dead yet in field and forest, there is a stir of preparation that heralds the coming Spring. The buds swell a little in the bright warm days. The water runs merrily from the dripping eaves and spouts, and the uncovered earth drinks in the flood, and the cheering rays of the sun. Could these sunny days last, the Spring would be upon us at once. But there is the fatal weakness of this fickle month. She does nothing persistently, and often closes in snow banks and frost, apparently as dead as December.

And March, in this respect, is just like a great many men and women. They lack pluck and nerve to put an enterprise straight through. Here is a man that starts vigorously in the business of farming. He purchases a homestead and begins to improve and cultivate. He repairs the house and out-buildings, builds new walls, gets the best tools, plows deep, and manures high, and shows that he has capacity enough to get rich by the cultivation of the soil. You call at his house the third year, and find that he has sold out every thing at a sacrifice, and gone to California. Had he kept on in his work, he would have made an unfailing placer of his farm. But his enterprize was only a March wind from the South.

There is another who goes in for improved stock. He purchases judiciously, and raises fine Morgan colts, superb Devons, and Suffolk pigs, that live upon almost nothing and grow fat. He takes pride in the sleek well fed animals that fill his stalls and sties, and makes a sensation at the fairs with the multitude of prizes that he carries off. He becomes known to the public as a stock breeder, and has orders for all the improved stock he can raise. He finds the business fairly remunerative, but in an evil hour is tempted to go into some new business that promises larger gains. A neighbor has become suddenly rich by speculation in city lots, or railroad stocks. He is envious of his success, invests largely, and is ruined. Too late he discovers that a man's experience in farming is of little avail in other callings, that a good judge of cattle may be a poor judge of men, and that a man great upon the farm, may be very small elsewhere.

Another has a right theory of farming, but is fickle in reducing his principles to practice. He sees clearly enough that draining pays in the long run; that deeper plowing is needed; and that more manure is the great want of his soil. If he drains an acre, he is alarmed by the fifty dollars that have slipped out of his pocket, perhaps never to return. If he subsoils, he counts the cost of the extra team and labor, and mourns over ten dollars sunk on an acre in getting it ready for a crop. If he gets his barn cellar in readiness, he shrinks back from the expense of digging and drawing muck enough to keep his manure factory running through the year. A hundred dollars spent on the raw material of manure, seems a great draw back upon his profits. True, the compost made last year wrought wonders, and gave him such crops as he never raised upon the old system, but then it costs so much to furnish the muck. He is troubled with a longing for creative power to make something out of nothing, and he makes small drafts on the muck mine.

In no business do men need more to follow a steady, persistent course, than in farming. There is no chance for sudden wealth, no brilliant speculations that will raise a man from poverty to affluence in a month, or in a year. As it is only the steady advance of the sun and the prevailing winds from the South, that bring the Summer and mature the harvest, so it is only the steady purpose and the persistent effort, that make the farmer successful. The reward of the mechanic is generally immediate and final. He receives his dollar for shoeing a horse, and that closes the account. But the reward of the farmer's toil stretches over many years, and he needs patience to receive the whole of it. The tile that he buries in the earth will carry water, and improve every crop extending over fifty years, or more. The money invested in the

compost heap does not all return to him the first or the second year. The improved stock that he brings upon the farm will make all his care of stock more profitable, as long as he lives. The orchard that he plants, will yield increasing products for a score of years, and children's children, probably, will pluck fruit from its branches. And the more wise and skillful the husbandry, the greater is the need of patience and persistent effort to reap its advantages. Such husbandry, with a contented mind, is great gain. The foundations for success are laid broad and deep, and the superstructure goes up slowly but surely, for a permanent edifice. While fortunes suddenly acquired, are blown to the winds, that of the shrewd and patient husbandman lasts for his life time, and is handed down, a precious inheritance for his children.

Calendar of Operations for March, 1861.

[We note down sundry kinds of work to be done during the month, to call to mind the various operations to be attended to. A glance over a table like this will often suggest some piece of work that might otherwise be forgotten or neglected. Our remarks are more especially adapted to the latitudes of 38° to 45°; but will be equally applicable to points further North and South, by making due allowance for each degree of latitude, that is, earlier for the South, and later for the North.

EXPLANATIONS.—*f* indicates the *first;* *m*, the *middle;* and *l*, the *last* of the month.—Doubling the letters thus: *ff*, or *mm*, or *ll*, gives particular emphasis to the period indicated.—Two letters placed together, as *fm* or *ml*, signify that the work may be done in either or in both periods indicated; thus, work marked *fm*, indicates that it is to be attended to from the *first* to the *middle* of the month.]

Farm.

The indications of approaching Spring, will soon arouse animate and inanimate nature to new life; cattle and sheep will grow restless in the yards, the grass will break from its long confinement, and the buds swell under the genial sunshine. The cultivator too will be in haste to start the plow and forward the year's labors. Indiscreet haste may injure the whole season's growth. Heavy land plowed while too wet, will remain lumpy through the Summer; plants checked in their first growth, recover with difficulty. Have all ready, and wait until the soil is in good condition, and Spring fairly open.

Buildings—Make all secure against the heavy winds of this month. See that fastenings of doors are in good repair. Complete necessary out-buildings before the busy season comes on. If any need painting let it be done as early as possible.

Cattle crave green food as the weather grows warmer; give them mangel wurzels, carrots, or turnips. Keep watch of cows about to calve, to render assistance if needed; give them separate and roomy stalls. Prepare cattle for spring work by generous feed. If long unused, they should be brought to their work gradually.

Cellars—Remove banking and admit light and air as soon as the season permits. Clear out all decayed vegetables and refuse. Save the brine from meat barrels for dressing the asparagus bed. Whitewash the whole at an early day.

Clover—Sow, *m*, *l*, in the morning, when the ground is well opened by frost; or upon a light snow—the latter is preferred by many, as enabling the cast to be made more evenly.

Draining—Improve the first opportunity for making tile or stone drains. Clear out open ditches, and use the muck for composting. See page 70.

Experiments—Prepare for conducting practical experiments in some branch of cultivation, and record a full account with the results.

Fences—Repair as soon as the weather permits.

Grain—Examine that stored in bins. Keep from dampness, mold, insects, and rats and mice.

Hired Men—Where several are employed, give each his own special work, as far as may be. Every team should have its own driver, and the most skillful be employed in the several departments.

Hogs—Give a little charcoal and sulphur with their food occasionally. Allow cooked roots with meal, particularly to breeding sows.

Horses—Give additional care, as the working season comes on. Guard against galls under the harness; clean well when returning from work. Blanket them when standing to rest in the wind while sweating from exertion.

Ice Houses—Complete filling, *ff*, if not done, and examine drainage and ventilation.

Manure—Reduce the compost heaps to as fine a condition as possible by frequently forking over. Cart out heaps to the fields, and cover with muck, plaster, or soil, to prevent escape of ammonia. Top-dress meadows with fine compost. Break up lumps left by the cattle last Fall. Remove offensive deposits from privies, sink drains, hen roosts, etc., before warm weather. See page 73.

Meadows—Remove bushes, fallen branches under trees, hedge rows about fences, etc. It is better to draw out stones in the Fall, than to trample in Spring. Allow no stock on mowing grounds.

Plowing—Wait until the ground will be left mellow. Go an inch deeper at each plowing, until there is a foot of good soil. Subsoil where practicable.

Potatoes—For early home use, start a few in a hot-bed about the middle of the month, to be transplanted as soon as weather permits. Or, bring them into a warm room, and allow the sprouts to get a good start. Secure plenty of choice seed.

Poultry are laying plentifully now, if properly kept through Winter. Supply with plenty of grain, chopped meat, boiled potatoes, cabbages, etc.

Seed—Procure improved varieties, from reliable sources, but beware of humbugging circulars promising wonderful returns from unknown plants. Test samples before purchasing largely.

Sheep—Follow directions given last month.

Sugar Maples—Tap as soon as sap will flow. Boil as soon as possible; use shallow evaporating pans.

Tools, harness, wagons, etc., should all be in perfect repair before the working season commences.

Wood—Complete the year's supply, if not done.

Orchard and Nursery.

The earlier operations can commence in this department, the better for the trees. Thousands are lost yearly by too late transplanting. As soon as the frost leaves the ground, replace condemned trees, and plant new orchards where needed. Fruit growing as a business is yet in its infancy in this country, and thousands of acres, now yielding a poor return of grain or grass, may be profitably devoted to raising apples, pears, and other tree fruits for market. Set out a few more trees this month.

Apple Trees—Scrape off all moss and bark lice, and wash with lye. Leave pruning of large limbs until Summer, but take off suckers. Replace poor sorts by grafting with choice varieties.

Cherries, Peaches, Plums, etc.—Let the homestead be well supplied; good fruit makes any place attractive.

Cions—Cut, *ff*, if not already done. Keep covered with sand until wanted for use.

Draining greatly improves land for fruit growing.

Evergreen Trees—Leave transplanting until May.

Grafting—Commence, *ll*, with trees that start earliest. Leave apples and pears until next month.

Insects—The parent of the canker worm commences to ascend the trunks of trees during warm days this month. Many may be destroyed by surrounding the trunks with paper covered with tar mixed with oil enough to keep it soft. Remove scale from the trunks and main limbs, and look for caterpillar eggs near the ends of twigs.

Manures—Lime and ashes worked into the surface at some distance from the trunks, are beneficial; also top-dressing with compost.

Pear Trees—Standards are valuable for both fruit and shade. Let there be plenty of choice sorts around the dwelling. A few dwarfs may occupy a place in the garden. Procure seedling stocks early.

Pruning—Read article on page 82.

Seeds of fruit or forest trees kept over Winter, should be planted, *ff*, *m*. Sow evergreen seeds, *m*, *l*.

Stocks budded last year—Remove the natural growth two or three inches above the bud.

Transplanting done carelessly, causes the loss of thousands of trees annually. Preserve the roots uninjured as much as possible; pare smoothly the ends of those broken. Reset them as soon as may be after taking up; carefully straighten out the small roots; set at the depth of natural growth, in soil enriched with compost of leaves or muck, ashes, and a small part stable manure.

Kitchen and Fruit Garden.

Except in favored locations, few seeds can be profitably planted out of doors this month, unless the season prove quite early, of which there are some indications. Well drained soils may be worked several days earlier than others. It is well to take advantage of the first practicable opportunity to plant a few early vegetables; as, in case of failure, there is only the loss of a small quantity of seed, and if successful, the gardener gains time. A hot-bed prevents failure from a backward season.

Artichokes—Fork in a dressing of manure, being careful not to injure the crowns. Salt and wood ashes are beneficial. Make new beds, *m*, *ll*.

Asparagus—As soon as danger from frost is past, fork in the manure spread over it last fall, and give a liberal dressing of salt. Make new beds, *ll*.

Blackberries—Read article on page 83.

Cabbage and Cauliflower—Sow, *ll*, in hot-beds, or boxes. Give constant heat and little air until well started, then allow gradual exposure, to harden for transplanting.

Cold Frames—Prepare the plants for removal by continued exposure as the weather grows warmer, but protect from frost. Sow cabbage, lettuce, radishes, etc., to succeed plants about to be removed.

Currants and Gooseberries—Prune and make cuttings, *ff*, if not already done. Put in cuttings and set new plants, *ll*.

Cucumbers—Start a few extra early in hot-beds.

Early Vegetables—Read "Hints on Starting Garden Plants early in Spring," page 79.

Draining—Try the experiment upon the garden, success there, will warrant extending it to the farm.

Fruit Trees—Plant a few dwarfs around the borders, *ll*, if there be sufficient room.

Grapes—If any must be pruned at this unseasonable period, to prevent bleeding, try the plan recommended on page 84. Uncover protected vines, and trellis or stake them up when mild weather is established. Fork in a good dressing of leaf mold, or chip dirt and bone dust.

Herbs—Divide and reset roots; sow on borders, *ll*.

Hops—Provide poles, *ff*, *m*. Plant roots, *ll*.

Horse-radish—Dig roots for family use, and for marketing, *ff*. Divide and replant, *m*, *l*.

Hot-Beds—Make, *m*, *l*. One of moderate size will supply several families with early plants for setting out; an arrangement may be made among neighbors to share the small expense. As the season advances, admit air to harden tender growth.

Lettuce—Sow, *m*, *ll*, in hot-beds, and cold frames, also in open ground on a warm border.

Manure highly. Use finely divided manures which may be thoroughly mixed with the soil, in preference to coarse material. Bone sawings, muck composted with stable manure and lime, night soil, and home-made guano from the poultry house, are all valuable. Prepare a vat or hogshead sunk in the ground to receive the sink slops from the house, for use in the garden this season.

Onions—For home use sow, *ll*. For general crop, April is more safe, unless in a very forward season.

Parsneps—Dig as wanted for home use or market. Leave the finest for raising seed.

Peas—Sow on warm borders, *ll*. Place the seed for about a minute in water raised to 190°, to destroy the weevil. Prepare brush, *ff*, *m*.

Peppers—Sow in hot-beds, *ll*.

Plow, subsoil, and trench when the season permits.

Potatoes—Follow directions given under "Farm."

Radishes—Sow at intervals in hot-beds, *ll.*

Raspberries—Remove covering from buried canes, and stake up, *ll*, if sufficiently warm. Fork in a dressing of good compost about roots. See page 83.

Rhubarb—Read article on page 83, this No.

Seeds—Secure a full supply of improved varieties from reliable sources. Test samples before purchasing largely. Most kinds are forwarded by soaking before sowing.

Spinach—Uncover protected beds; sow seed, *ll.*

Strawberries—Rake off Winter covering, *ll.* Give top-dressing of ashes, and fine compost, hoeing it in.

Sweet Potatoes—Plant in hot-beds, *ll*, for sets.

Tools—Repair old and procure new and improved.

Tomatoes—Sow in hot-beds or in pots in the house, *ll.*

Trellises, Arbors—Put in repair, and erect new.

Turnips—Sow, *ll*, in hot-beds, for early use.

Winter Cherries (*Physalis*)—Sow, in hot-beds, *ll.*

Flower Garden and Lawn.

That "haste makes waste" has been the bitter experience of many an ambitious gardener. A few warm bright days in March, should not tempt one to strip trees and shrubs of their Winter protection, to expose the frames, bring out house plants, or put in seeds. A sudden change in the weather, with a cutting north west wind, ending in a snow storm, may soon show the error. Better wait until the ground is settled warm, before exposing tender plants or sowing seed. There is work which may safely be done wherever frost is out of the ground. Many of the perennial flowering plants may be divided and reset, by which an earlier and more perfect bloom will be obtained. Among these are the pœony, dicentra, chrysanthemum, sweet william, holyhock, bee-larkspur, tall phlox, etc.

Flowering shrubs, especially the early blooming sorts, should also be transplanted as soon as the severity of Winter is past. Neither plant, tree, nor shrub are entirely safe when set out just previous to severe freezing weather. The disturbance of their rootlets, and the more open soil about a newly planted tree, render it susceptible to injury from hard freezing.

Cuttings of shrubs and vines should be taken off early in the month before the buds swell. Keep in boxes of earth or sand in the cellar until planting.

Bulbs which had a coating of manure, leaves, or straw given them for a Winter protection, may be partially or wholly uncovered, toward the latter part of the month, in this and Southern latitudes.

Pruning of roses, and other flowering shrubs, and climbing plants should be completed, *ff.* Each plant should be cut back with reference to its flowering habit. By strongly heading back those shrubs which only yield flowers upon the terminal branches, as the magnolia, spiræa, etc., the bloom is nearly destroyed. Roses, especially remontants, may be cut back freely, and a finer Autumn bloom is the result.

Box Edgings are prone to thicken up and become unsightly, unless renewed, or set over every few years. This transplanting may be done as soon as frost is out, and the box will look better for the early change. In resetting, clip both root and top.

Grass borders and turfing generally should be arranged the latter part of the month, if the weather permit. Beat or trample the turf down firmly, and sift fine earth into the crevices. Grass edging along the walks or flower borders may also be trimmed with a sharp spade, or better still, an edging knife.

The present is a favorable season to collect an abundance of manure, and to apply it to such places as do not admit of spading. A fine coat spread over the lawn will soon be leached by the rains, which will carry its valuable properties to the roots of the grass. A good dressing may also be given to the shrubbery and trees.

Hot-Beds should be made about the middle of the month, for starting cuttings, and for sowing seeds for an early bloom. The gardener finds a hot-bed almost indispensable to propagate much from cuttings. They need a bottom heat, and the protection of a glass frame, with just sufficient moisture.

Green and Hot-Houses.

The forcing houses, conservatories and other receptacles for Winter plants should now be very attractive, although a few of the more showy plants have completed their blooming period. Everything should be kept neat, and no rubbish, plant trimmings, dead leaves, moss covered pots or boxes left upon the floor or shelves, or dust suffered to collect upon the leaves. The rooms should be aired frequently when the weather is suitable, avoiding a chilling draft directly upon the plants.

Heat must be regulated, according to the object in view. If the house is merely a receptacle of plants designed to be kept from the frost, and which are to bloom in the open borders, then a moderate fire heat, with the thermometer from 40° to 45°, is sufficient. With a collection intended for present flowering, or for inducing a rapid growth to use when the out-door planting season arrives, a Summer temperature of 65° to 75° is needed, and for orchids and other tropical plants, as also for propagating purposes, the houses or rooms may safely have a temperature of 90°. Whatever condition be aimed at, it is always better to increase the heat in sunshine, and let it decline a little at night.

Acacias, Heaths, Azaleas, Epacris, etc., require little water, and shade from the direct rays of the sun.

Annuals may now be sown in pots and boxes for decorating the open borders at planting time.

Bedding plants started last month, should be pushed forward and prepared for out-door planting in April and May. If more are wanted, insert cuttings or make layers at once.

Bulbs—Keep up a successive bloom by bringing forward from the cooler apartments every two weeks. Change the water in hyacinth glasses each week.

Camellias—Watch carefully for red spider, and wash the foliage of affected plants, syringing often. Give liquid manure to plants inclined to lag, and prune to a good form.

Chrysanthemums and Fuchsias may now be propagated from cuttings, as may also many other half woody and shrubby plants.

Fuchsias—Increase the stock by cuttings from new wood of old plants. Repot any needing it, and cut back to a compact head.

Geraniums, Chinese primroses, Cinerarias, etc.—Kept near the light; turn them frequently.

Grapes—Be careful not to rub off the first buds. Syringe moderately, and protect borders well.

Insects—Washing the foliage in warm, or even hot water, will frequently dislodge or destroy them, but where it fails, tobacco fumes must be resorted to.

Orchard Houses—The fruit trees now require frequent waterings, with a moist atmosphere. Give liquid manure in moderate quantities, and turn the tubs or pots frequently.

Pansies—Set in an airy place, with a moderate heat.

Parlor Plants require even more care than those of the Hot-House, especially in point of neatness. The furnace or stove will need attention at night, especially during severe weather, or the plants will be chilled. They will also require frequent turning, especially if growing near the window, to keep them in an erect position. No weeds or moss should ever be permitted upon the pots or the earth in them. See that the drainage is good and only enough water given to keep the plants in a healthy state—the surface soil may have a dry appearance when there is sufficient moisture at the root.

Roses—Established cuttings and roots for early out-door blooming, should now have larger pots.

Syringe the walls and foliage of plants, and wet the floors to induce a moist atmosphere from evaporation. It will also tend to keep insects in check.

Water is required in proportion to the growth of plants. As most plants are now pushing out vigorously, liberal sprinklings should be given: make sure of good drainage. Let the water be taken from a cistern or tank in the house; it should be of the same temperature as the atmosphere.

Apiary in March.

BY M. QUINBY.

The bees can fly out, and collect pollen in some places, during many days this month. After one or two favorable days, examine the condition of each stock, on some clear cool morning. Several important points should be ascertained *now*. You want to know the strength of the colony, whether they have a queen or not, whether they have sufficient stores to last through the Spring, and if the combs are in good condition.

The common hive is readily examined by turning it over. It can often be done with care, without arousing the bees; they may be quieted with tobacco smoke if necessary. Let the sun shine directly between the combs. The cluster of bees in the strongest colonies will extend through nearly all the combs. When there are bees between only two or three combs, the colony is weak, and needs much care to save it from robbers, especially in large apiaries. Close the entrance, allowing room for only one bee to pass at a time. It is quite common for weak colonies to be short of honey. The inexperienced ought to avoid feeding unnecessarily; it induces robbing, and a greater consumption of honey. Ascertain, if possible, whether there be any store on hand; while the hive is inverted, look to the top of the outside combs for sealed honey. As long as that may be seen, the colony will not starve in two weeks, unless plundered. When none can be seen, it is best to feed. Although it may be done out of doors—unless the cold weather is unusually protracted—it is better during this month, to bring the hive to the house as directed last month. When these things are neglected, a colony may be found some morning apparently dead—bees on the floor, and scattered among the combs. But unless they have been in this situation over twenty four hours, they may be revived. To ascertain this, warm a few of them gradually; any sign of life indicates that the swarm may be saved. To pour a few spoonfuls of liquified sugar, or honey warmed, directly among the bees between the combs, is probably the best thing to be done. Tie a cloth over the hive to confine the bees, and bring to the fire to warm up. In a few hours, after consuming all the food, they may be returned to the stand, or room, and regularly fed as before directed.....Another phase of destitution, is desertion. It is liable to take place in unfavorable seasons, up to the time of clover flowers. The bees issue precisely as a swarm, and continue flying a long time. They sometimes cluster, but more frequently return, or join some other stock. In the latter case, they are frequently destroyed. If they cluster, return them to their own hive, and feed regularly.

The presence of a queen is often determined on first raising the hive. A good stock will have long since commenced rearing brood, and some few immature bees may usually be found on the board. If none are seen, some of the eggs may possibly be discovered by a close inspection of the dust that has fallen from the cluster. Either, when seen, may be taken as evidence of a queen. The absence of these signs is suspicious, but not conclusive. The stock should be disposed of before running down too low. By driving the bees away from the combs when they have clustered, sealed brood can be seen if they have any. A queenless colony at this season, will frequently desert and join some other. The queenless, or deserted hive should be cared for immediately. Without bees, the moth will destroy it as soon as the weather is sufficiently warm, yet by smoking thoroughly with sulphur as the worms hatch, it may be saved advantageously for a swarm. An ordinary swarm without a queen now, will about run down by the swarming season. The bees should be joined with some weak stock. If any *old* stock is diseased just enough to spoil it—such as is mentioned in "The Apiary for September, 1860"—it will be just what is wanted for either the queenless or deserted hive.

If any colony is found dead, and the bees have been left between the combs till moldy, all the affected portion should be broken out. The remainder, if clean, may do for the use of the bees again....If the bees between part of the combs are dead, remove them; when moldy, cut out the combs as far as mold extends.

Bees that are in the house, may be set out on the first fair, warm day. Should they become uneasy before such a day occurs, and leave the hives, put some snow or ice on the floor of the room. Put out but few at first—in an hour or two, as many more. Each should occupy its old stand if possible. Let the first be as far apart as possible, and others may be set between afterward. By looking just at night, at those set out during the day, the loss of the queen is often ascertained by the unusual commotion among the bees at this time.

Unbolted rye meal finely ground, is still recommended as a valuable bee feed. Its chief value depends on being fed early, before much pollen is obtained from the flowers. Let all the bees have access to it, by spreading over a large surface, as a sheet or floor made for the purpose, and placing it in some warm corner a few rods from the hives.

Into which are thrown various useful or interesting Items, Replies to Questions, Extracts from Letters, Gleanings from other Journals, etc.

In a New Place.—Hitherto, the "Basket" matter has been placed at the end of the paper, where it has been subject to contraction, and sometimes to crowding out altogether, by the varying space occupied by the markets, business items, and advertisements. But this department has come to be so valuable, that we shall hereafter allot it a definite space here. [Several readers have criticised the arrangement of our pages; they are not aware perhaps, that it is necessary to place most of the finer engravings on the *inside* sheet, and put it upon a double steam press nearly a month in advance, so that it can be worked carefully. The outside sheet, containing the markets, etc., is printed more rapidly on two presses, and is delayed to the last moment possible, without missing the Pacific mail, leaving on the 21st. Contributors will therefore understand that communications and items must come very early to hand, to find a place in a particular number, and especially so, if to go on the *inside* sheet.

To Correspondents and Contributors.—We beg our friends who have kindly contributed a great variety of articles, suggestions, queries, etc., not to be annoyed at any apparent want of attention. From the great mass of letters received, and articles contributed, we must necessarily select for each paper, not only the *best*, but such as will make up a variety, and be most seasonable. We have many really good articles that will not spoil by keeping any length of time.

The Lists of Apples, and of Officers of Societies, asked for last month, come in slowly, so that we can not yet begin to make up anything like complete tables. Please forward them as early as may be.

Onion Culture—*New Edition.*—Our first edition of 1000 copies having been exhausted, we have printed a new edition. This most valuable work should be in the hands of every one growing onions. It will be sent, post-paid, for 21 cents. See New Premium list, page 96.

An Elementary Book on Agriculture, for use in the schools of the State, is being prepared under the auspices of the Mass. Board of Agriculture.

Cutter's Seedling Strawberry—Correction.—On page 57, February *Agriculturist*, this berry is wrongly classed with the pistillates. A note from Mr. Cutter, correcting the error, says "it is not only a *perfect* flower, but is not excelled in quality by any other berry in that vicinity."—We have not grown it as yet.

Evergreen Nursery—Correction.—This nursery is located at *Woodbury*, N. J., instead of "*Woodlawn*," as advertised last month.

Raspberries.—James Glass, Livingston Co., Ill. The Antwerp is generally considered an excellent variety; it may be yours are not true to name. The yellow variety described by you resembles what is known as the "Keeler." It is highly esteemed by those who have it.

Grapes in California.—Vine-growing in Calaveras County, California, has greatly increased in the last two years. In 1855 the assessor reported 24,000 vines, while in 1860 he reports 100,000.

Japan Pea.—A. A. Chandler, Cumberland Co., Me. The small bean, as you call it, is the Japan Pea, but resembles a bean in appearance. It is principally grown for stock, being quite prolific. The larger kind sent, appears to be a sort of Southern bean.

Sprouting Sweet Potatoes.—M. C. Taylor, Chester Co., Pa., and others. Sweet potatoes will usually sprout readily in a hot-bed. Without artificial heat they sometimes remain long in the ground and rot.

Germinating old Seeds.—D. Pangburn, White Co., Ark. Old seeds which do not grow readily when planted in the ordinary manner, will frequently vegetate after being scalded for a short time, say two minutes; or better, soak in warm water until the shell is softened.

Old Seeds Vegetating.—S. B. M., New-York. As you do not name the kinds of seeds 3 or 4 years old, we cannot judge whether they are good or not. Many kinds, if kept dry, and not subjected to great changes of heat and cold, will preserve their vitality for many years, centuries even; while a few, parsneps for example, are not to be positively depended upon when more than a year old. Better try a few in pots or boxes of earth, in-door.

Hubbard Squash.—The Massachusetts Horticultural Society has granted a special premium of $25 to Mr. James J. H. Gregory, for the introduction of the Hubbard Squash. This variety, which has been on our list for free distribution for two years past, has given the highest satisfaction to those who have tried it, as is attested by numerous letters received from correspondents. The greatly praised Honolulu excels it in prolific bearing, judging from our own experiments, but for flavor, either in "sauce" or pies, it must yield the palm to the Hubbard. We like it so well that we have procured a large supply of seed from Mr. Gregory for free distribution.

Carrots—Value, etc.—P. C. Daniels, Tioga Co., N. Y., writes, that for ten or twelve years past he has raised one to two hundred bushels of carrots annually. He considers 500 bushels per acre a fair yield, and that 15 cents per bushel will pay well for growing them, which would afford a profit of $105 per acre, reckoning them at $12 per tun (60 lbs. per bu.)—providing the yield be 500 bushels. He esteems one bushel of carrots *fed with* one bushel of oats, to be fully equal to two bushels of oats, for horses; and ranks carrots as the best roots for other stock.

Locust for Timber.—J. K. Whitson, Riley Co., Kansas. Locust is a good timber for you to raise, and the Yellow (wood yellow) variety is the best. The Osage Orange will probably be a good hedge plant with you.

Imphee Sugar.—Walter Carothers, of Richland Co., Ohio, sends us a fine sample of sugar, made from the Imphee or African Sugar Cane; says he raised both Sorghum and Imphee last year, and found the latter to crystalize much sooner than the former, and advises the planting of a greater breadth of this and less of the sorghum the coming season. This is against the general experience, we believe. In this particular case the imphee probably went back to a valuable form, but it may not be so with the next crop, for we doubt whether there has been any pure [unhybridized] seed distributed in this country.

Sorghum Syrup in Iriquois Co., Ill.—J. G. Brandenburg, writes that there were at least 10,000 gallons of this syrup of excellent quality, manufactured in the above County during the past Fall.

The Immense Grain Crop of the West.—Some of the Western subscribers to the *Agriculturist* found fault with our high estimates of the grain crop last Autumn. Here are a few figures for them: During the year 1860 there were received at Chicago, 36,500,000 bushels of grain of all kinds; at Toledo, 14,504,203 bushels; at Milwaukee, 11,040,488 bushels; at Detroit, 6,760,099 bushels; at Cleveland, Sandusky, and other ports, over 11,000,000; or in all, over 80,000,000 bushels! This is only a portion of the surplus sold, not including what went down the Mississippi, out by railroads, etc., while the surplus still on hand at the close of 1860 was vastly more than at the close of 1859.

Moore's Rural New-Yorker.—During a recent pleasant call from our friend D. D. T. Moore, we were glad to learn that this journal is holding its ground well, notwithstanding the "hard times." The Rural is worthy of the success it has attained. It is devoted in part to Agriculture and Horticulture, and in part to news, family reading and miscellany. Published at Rochester, N.Y. $2 a year. Like the *Agriculturist*, it aims to promote good morals, as well as communicate useful information. Though our strongest business competitor, it is laboring for the same ends, the elevation of cultivators and their families, and we bid it god speed—there is room enough for a dozen such journals, and every family would be the gainer by taking both papers. No one should confound the Rural New-Yorker with an imitation published in Oneida Co., called "Miner's Rural American"—a different affair altogether.

Class Book of Botany, by Prof. Alphonso Wood, author of a popular botanical text book, published fifteen years ago. The arrangement of this new work, upon the natural system, is clear; and many families of plants enumerated, contain additions not found elsewhere; some of the well known exotics are also included. The descriptions are distinct and full, and the illustrations, particularly of structural botany, are well executed. It contains 882 pages and is a valuable addition to the student's library. Puplished by A. S. Barnes & Burr, N. Y. Price $2. If desired we will forward copies post-paid upon receipt of price.

Harris' Work on Insects.—We are glad to learn from the Message of Gov. Boutwell, of Mass., that a revised edition of this valuable work of the late Dr. Harris is to be published at the expense of the State, during the present year. As 1000 copies will be at the disposal of the present Legislature, he recommends that a portion of them be furnished for distribution, to Professor Agassiz, who has gratuitously rendered important service in the revision of the work.

Book on Horses.—Silas M. Douzer, Washtenaw Co., Mich. Herbert's Hints to Horse-keepers, is a valuable, plainly written work. Price $1.25, for which it can be forwarded post-paid by mail, or it can be easily obtained as a premium—See page 96.

A Cheap New Pen.—We have in daily use a new style of metallic pen, patented by Messrs. Warren & Ludden, of this City, which is formed by a combination of metals, and "diamond pointed" with iridium in the usual manner. The advantages claimed for it are, that while it is, like gold, uncorrosive, it is, if any thing, more elastic, and can be made at one-third the price of gold pens. They are also ingeniously fitted upon an ordinary wood pencil, so that both can be carried in the pocket, always ready to be used as pencil or pen.

To Prevent Skippers in Hams.—In a communication to the Cotton Planter, Mr. W. McWillie says he avoids the skipper by simply keeping his smoke-house dark, and the moth that deposits the egg never enters it. He has now hanging in his smoke-house, hams one, two, and three years old, and the oldest are as free from insects as when first hung up.

Byfield Swine.—A subscriber in Winnebago Co., Ill., wishes to know where he can get a Byfield sow for crossing with the Suffolks.

Colic in Horses.—The Farmers' Advocate prescribes for colic in horses: a blanket wrapped around the body and drenched with cold water. It steams like a boiling pot, and cures in fifteen minutes—[*if* it don't kill.—ED. *American Agriculturist.*]

Cure for Laurel Poisoning.—Wm. F. Bassett, Franklin Co., Mass., recommends to give to each poisoned sheep, one oz. essence of wintergreen; a little more in bad cases.

Keeping Moths from Bees.—J. F. Wescott, Green Co., Wis.—Remedies are given in Apiary for July and August of last volume. Vessels of sweetened water set about the hives, only at night, during the early part of July, are the best remedy; they entrap and drown the night flying millers.

A High priced Dog.—A new feature at the late annual cattle show at Birmingham, England, was a show of dogs of every known breed. Among other costly dogs was a King Charles spaniel, priced at $2500. Whew!

Protecting Trees from Sheep.—C. Jackson, Niagara Co., N. Y., writes that young trees may be protected from sheep, which sometimes nibble and injure the bark, by applying to the trunks a mixture of four quarts of hog manure with eight quarts of water. Put it on with a broom or brush—the sheep will prefer nibbling the grass, and the application will not injure the trees.

Cement for Glass and Iron under Water.—The following is, we believe, the method of making cement for aquaria, used in the London Zoological Gardens. Sift together, say one gill of litharge; one gill of calcined plaster of Paris; one gill of dry white sand; and one-third of a gill of finely powdered rosin. Keep corked tightly, and use as needed, by mixing into a putty with boiled linseed oil, adding a little patent dryer. Mix each lot at least 15 hours before using. After applying, let it dry a few hours before letting on water. A writer in the Tribune endorses this as the best of a hundred different compositions tried by him, and says it is equally good in salt or fresh water, and does not affect the water at all.

Reapers and Threshers Combined.—C. Durst, Gillespie Co., Texas. There are reaping machines with threshing attachments which cut, thresh, and winnow at one operation, but the cost of which, or the names of the manufacturers we can not now give. Most grain growers prefer a simple reaper.

Hauling out Green Manure.—J. Miller, jr., Fairfield Co., O. Usually, it is not best to haul and spread manure upon the field as fast as produced. It is improved by fermenting; and is increased in value by adding to it muck, sods, or even good soil. If specially desirable to take it to the field during Winter, let it be put in heaps and covered with a layer of soil, until you are ready to spread and plow it under.

Dressing Sheep—Quick Work.—At a sheep-dressing match in this City, in February, after the sheep were merely killed, Rodger Gorman dressed *ten* of them, fully preparing them for the meat market in 22 minutes and 3 seconds! His competitor dressed ten rather larger sheep in 32 minutes.

Angers Quince Seed.—D. C. Benton, Adams Co., Ill. Quince seeds will not produce the particular sort planted, any more than apple seeds. Better get cuttings, or a few rooted plants which you can afterward layer. You will find the Bloomington (Ill.) Nurseries advertised in February *Agriculturist*, and other reliable ones in this and other numbers. We do not knowingly admit advertisements of unreliable men.

High Manuring.—George R. Underhill, Queens Co., N. Y., whose experiments in potato culture were noticed in the Feb. No., p. 43, writes that last Spring he prepared 3 acres of land for an asparagus bed, on which 1000 one-horse loads of manure were used, and 300 loads more will be applied this year. Another plot just commenced will receive about an equal quantity. His experience warrants high manuring. We shall be pleased to receive accounts of the experiments Mr. U. proposes to make, the coming season.

Clover Roots and Tops.—"Subscriber." Clover roots contain more solid matter than the tops, pound for pound. All parts of the plant are valuable fertilizers; and land will be enriched more rapidly by plowing all under, than by leaving only the roots to decay in the soil.

How much Manure?—Mr. Boynton of Sandwich, Mass., has a well drained meadow of 4½ acres, to which, every November, he applies the year's manure of 15 horses. As the result, he gets from 26 to 34 tuns of hay annually, including two cuttings. The second growth, or aftermath, ranges from 7 to 10 tuns.

Prolific Sheep.—A subscriber writes to the *Agriculturist*, "I have one ewe of the Tartar breed, that had two lambs in August, 1859. In January of last year she brought forth three, and on August 20th, she dropped too more; making seven lambs produced in about one year. Her first twins are also now with lamb. I find the Tartar crossed with the South Down give the best lambs I ever butchered."

Aged Horses.—G. E. Kimberly, New-Haven Co., Conn., writes that he has a white pony, which, to the best of his information, is 40 years old. He weighs 600 lbs., and does all the work connected with a store.

Largest Horse in the World.—Wilkes' Spirit of the Times says that a gentleman named Potter, recently exhibited a horse at Newcastle, Penn., that weighs 1777 pounds. He is a bright bay, of the Clydesdale breed, and was bred in Cumberland, England. The American Stock Journal, speaks of this as "the largest horse in the world." We refer our cotemporary to the Farmer's Magazine (London), which has an account of the dray horse that took the first prize at the Royal Agricultural Show at Norwich, in 1857. This horse was reported to be 17½ hands high, and to weigh 2463 pounds.

Good Cattle in Penn.—The Chambersburg Times mentions six fine steers, all raised on the farm of Philip Merper, Letterkenny, Franklin Co., the total live weight of which was 10,655 lbs.

Double Calf.—S. Uttee, Pike Co., Pa., says he had a heifer which could not be delivered of her calf, and on killing her, he found a large calf with a double head complete, and double joints in its hind legs, and asks if such occurrences are common? They are quite rare.

Corn and Cob Meal for Swine.—Mr. A. Reed, says in the Dairy Farmer, that he has known this meal to produce constipation in several instances. Two years ago this Winter, he fed six fine shoats exclusively upon corn and cob meal. After three or four weeks feeding, several of the pigs refused to eat, and in three or four days bloated and died—a post mortem examination of these showed that they were constipated. To those still alive, one ounce of Epsom Salts was daily given to each, in their food, and an injection of warm soap suds, they were also given one feeding of carrots per day. All thus treated recovered.

A Large Pig.—Henry Marlton, Cumberland Co., Me., writes that he has slaughtered a pig, just 20 months old, which weighed, when dressed, 668 pounds.

Are Bees Domestic Animals?—A singular point of law was recently submitted to the French Courts. A boy having been knocked down and killed by a horse that had been stung by some bees, the father brought an action against the owner of the bees. The lower court held that bees are "ferocious animals," which no one can be expected to control, and, therefore, the action could not be maintained. An appeal was presented to the Higher Court, and after long arguments, the Court decided that bees are "domestic animals," and that the owner is responsible for any injury they commit.

Increased Yield of Butter.—The dairy of the Hon. Zadock Pratt of Greene Co., N. Y., shows a marked improvement for the last four years. In 1857 he made on an average one pound of butter from 39 lbs. of milk; in 1858 from 32 lbs., in 1859 from 29 lbs., and in 1860 from 24 lbs. Here, in other words, 39 lbs. of milk, or 19 quarts, produced 10 ounces more of butter in 1860 than in 1857. Such an increase would add largely to the profits of dairymen generally. Would not proper skill and care secure the same result everywhere?

To Expel Earthworms.—In answer to the query in last month's Basket, "Pennsylvania" writes. We have not *proved* the common earthworm destructive to pot-plants, but have sometimes watered them with weak lime water—a small teacupful to a plant in a 2 qt. pot, and in less than 24 hours have found at least three kinds secreted in the saucers below, frequently in great numbers. The appearance of some of them made it quite satisfactory to have them removed from the tender roots. If they are not destroyed by the operation, it is of importance to displace them immediately after disturbing the pot, as they will often crawl back on finding their hiding place discovered.

Salt for Wire Worms.—Several inquire about this. It is confidently asserted by some that two or three bushels of salt sown broadcast on an acre will destroy wire worms. We have always doubted this. Fifty to a hundred bushels per acre might have some effect; but even the larger quantity would hardly make the ground salt enough to disturb the worms. We have somewhere seen a statement that two bushels of salt put upon a rod of ground badly infested by wire worms did not stop their ravages. This amount (160 bushels per acre) would give less than a gill to each square foot—not enough to pickle it very strongly, if 8 or 10 inches deep.

Salting Wheat.—R. Sewell, Baltimore Co., Md., inquires if three to four bushels of salt per acre, sown on Winter wheat, will prevent the fly, (Hessian, or midge?); also whether the application will injure the grain. Will those who have tried it please answer.

Larks Wanted.—F. Boyce, Washington Co., O., is of opinion that the grain fields of Germany are kept free from insects by the large numbers of larks, which make their home in the grain fields alone. He states that the bird is held almost sacred there; no man or boy would injure one. He thinks they should be imported and disseminated here. A good suggestion; though were there less slaughter of our own native birds, there would be more slaughter of insects, and less loss of grain.

Cure for Gapes.—J. W. Rockwell, Fairfield Co., Conn., writes that gapes in fowls may be prevented by mixing cayenne pepper with their feed, a tablespoonful to a pint of meal, as soon as they are observed to sneeze. Previous to adopting this remedy, he lost nearly all his chickens, but for two years past in which it has been tried, all have been raised.

Shooting Rats—Also Worrying them Out.—S. Paschol, of Chester Co., Pa., recommends shooting a few, and says the rest will leave. Wool should be used for gun-wadding to avoid fire, and great care should be taken, as many barns have been set on fire with guns used in killing rats. [This method has often proved effectual, but few persons can afford the time to watch, wait for, and shoot the pests.—Ed.]—In another case, Mr. P. worried them out, by stopping up all new holes as soon as made, except one before which a steel trap was placed. The rats got disgusted and quit.

A very Large Potato.—Mr. J. S. White, Johnson Co., Ind., writes to the *Agriculturist* that he last year raised a potato which weighed 3½ lbs.; he asks who can beat it?

Sugar Beets.—R. B. Cram, Hillsboro' Co., N. H., and some others, ask for the experience of some practical grower, of the best method of raising sugar beets, and their value for feeding purposes.

Onions in Danvers, Mass.—Within six miles of South Danvers, Mass., 100,000 bushels of onions have been produced in a season. This crop does not exhaust the soil; since it has been continued on the same land for 20 years, yielding from 300 to 500 bushels per acre, each season, at a net profit of $100.

Premium Corn Crop.—G. P. Urich, Berks Co., Pa., thinks the soil in his vicinity equal to any other, but it will not produce such *tall* corn crops as that of Mr. *Long*, (see Basket Item in January *Agriculturist*.) He thinks there must have been a mistake in measuring the land, or the corn was weighed, cobs and all, to get the 94 bushels per ⅓ acre. If really correct, Mr. U. hopes to see the method of raising given in the *Agriculturist*. Will Mr. Long respond?

Good.—A farmer in Watertown, Ct., has been fined for letting Canada thistles go to seed on his own land.

Get Clean Seed.—The foul seed grievance is a real one. Farmers buy nine-tenths of their weeds when they purchase their seed, and thus are made to pay for what costs them many dollars, year after year, to get rid of.

Sorghum Brooms.—The Delaware (Ohio) Gazette mentions the receipt of some superior brooms manufactured from the brush of the Sorghum or Chinese Sugar Cane. It is claimed that besides being better than the ordinary broom corn, the yield of brush is much larger, to say nothing of the value of the main stalk for syrup and sugar. [Is there not some mistake here? The Sorghum as we have grown it, and seen it grow, has not a brush of sufficient length and fineness to be adapted to making good brooms.—*Ed. American Agriculturist.*]

Sorghum Syrup in Iowa.—A. H. Perry, Cedar Co., Iowa, writes that he made 2,500 gallons syrup the past season, most of which was of very good quality. He wishes to know how to convert it into sugar.

Profitable Acre.—J. G. D. B., Coxsackie, N. Y., last year sold currants, plums, pears, and apples from part of his acre of ground, to the amount of $235, after paying for freight, cartage, and commission. The remaining part of the plot is occupied by the dwelling, front yard, and kitchen garden. This shows *what* can be done; many readers would like to know *how* it is accomplished—also how much labor and money were expended to bring the place up to such productiveness.

Strained Honey in Boxes.—J. C., Windham Co., Conn. We know nothing of the clear honey put up in beach wood boxes, to which you allude.

Coal Oils, it is said, and perhaps truly, have the valuable property of never becoming rancid. All other oils, vegetable and animal, absorb oxygen, and decay; but the mineral oils derived from coal, are permanent compounds, like water, and do not experience corruption or change from time and exposure.

California Beer Seed.—Mrs. E. Weed, Obion Co., Tenn. The substance described in your letter, resembles in its effects, the ferment plant, sometimes called the "Vinegar plant," notes on which were published in the *Agriculturist*, Vol. XVIII, pp. 247, 307 (Aug. and Oct. Nos.) In form and appearance, however, it differs from that article. We shall be pleased to receive and examine the specimen you kindly offer to send.

Wet Cellars.—"Subscriber." A coating or two of cement upon the bottom and sides of a cellar will generally exclude water which comes in through the soil. If the ground be springy, a thick grouting of stones and cement will be needed to keep water from bursting up through the cement. If it enters from near the surface, dig a drain to carry it away.

Soap Stone Griddles.—P. C. W., Town Hill, Pa., writes that his experience with them is not favorable. He found it took too long to heat it, monopolizing the stove nearly an hour; the cakes would stick a little to the griddle, and more to each other, and finally the whole thing "blew up," scattering the fragments and the batter all over the kitchen!

The Largest Tree in Massachusetts, is said to be an Elm, situated upon the Hubbard farm, in North Andover. It is 110 feet in hight and its branches spread over 1[illegible] feet in width. Its girth, at 6 feet from the ground, measures 22½ feet.

Green Wood and Matrimony.—Mrs. C. J. Allison, Richland Co., Ill., says very truly "There's nothing takes the romance out of a young wife, like punching wet, green, or soggy wood in a cook stove." Truer than some preaching. The man who requires such a vexatious task of his wife, by neglecting to provide a well seasoned wood pile, deserves "punching" himself—shiftless farmers please make a note of it.

Starch in Vermont.—At Stowe, Vt., there are five factories in which starch is made from potatoes. Each consumes about 20,000 bushels per annum, and eight pounds of starch is the yield of each bushel.

Accidents with Farm Implements.—Next to steamboats and railroad accidents, says an Iowa paper, more people have been killed last year by harvesting and threshing machines than by any other cause.——This is guess work and rather random guessing, thinks the *American Agriculturist.*

Ditching Machine.—Thomas S. Hall, Stafford Co., Va. We know nothing, practically, of the machine you refer to.

Death from Matches.—The Dublin Medical Press states that a child aged sixteen months, was poisoned to death by sucking the phosphorus from lucifer matches, which had been given him by a little companion.

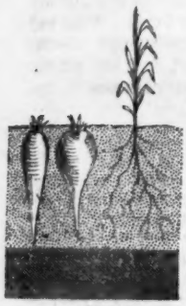


Fig. 1.

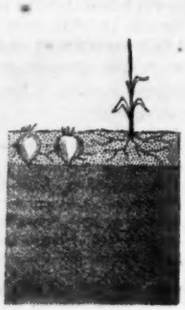


Fig. 2.

Draining—Why—Where—How.

(Continued from page 36.)

WHY—WHERE.

Every cultivator should understand and appreciate the following well established facts, which are applicable to all soils that are not naturally drained by a porous subsoil. They were in part referred to last month:

1. Draining prevents the winter-killing of crops. It is the expansion of water in the soil, and not the expansion of the soil itself, which tears and destroys the roots of plants.

2. Draining land prepares it for much earlier working in Spring, and causes it to remain dry and warm later in Autumn; it is therefore equivalent to lengthening the season; and has the same effect as moving the land from one hundred to five hundred miles southward.

3. Drained land can be worked much sooner after showers; crops are also less retarded by cold rains, and they therefore grow larger.

4. Drains, by carrying off the water underneath, prevent its evaporation from the surface. When water evaporates, even in the form of cold vapor, it carries off a large amount of heat in a latent or hidden state. Drained soils are always warmer and more congenial to plants.

5. Most undrained lands remain saturated with water during half of the year, or from November to May, and many soils are in this condition three-fourths of the time, if we include wet spells during Summer. But while the pores are already full of water, melting snows and falling rains run off *over the surface*, carrying with them into low lands, and into brooks and rivulets, a large amount of manures, or of vegetable matter, and soluble mineral elements of soils. All the color of rivulets, brooks, and rivers, is given by these rich materials washed from the soil. When land is underdrained, the water soaks *down through* it; the soil filters out and retains these valuable materials, and only pure water runs away in the drains. For this reason draining is equivalent to manuring.

6. "Two bodies can not occupy the same space at the same time." If the pores of the soil are filled with moisture, air is kept out. Drain off the water, and air will circulate more freely through it. If the drains at their outlets are left open, the air will pass along them and rise through the soil. This free circulation of the air is useful in many ways, thus:

7. Air circulating in the ground oxydizes and destroys poisonous metallic salts which abound in every soil not exposed to air. Clover, for example, is a deep rooted plant, which flourishes only a year or two on most soils. The reason is, that when its roots enter the subsoil and take in the poisonous salts, the clover is literally drugged to death. Give it a deep, air-permeated soil, and it will grow without renewal for half a dozen or more years. This has been fully proved.

8. Air decomposes manures, and other vegetable matter in the soil, and fits their elements to enter the roots to nourish the plants.

9. Air carries into the soil more or less of ammonia, and carbonic acid, which act as nutriment or stimulants to the plants. Here (as in 6) we see that draining is equivalent to manuring.

10. Air, in passing from drains up through the cooler soil, parts with a considerable amount of moisture. The warmer the air, the more the concealed moisture it contains, and the greater the amount yielded to the cooler soil. The free circulation of air obtained by removing the water has, therefore, a direct tendency to make the soil more damp during a drouth. Corn and other crops growing on drained, deeply worked land, seldom, if ever, suffer from drouth.

11. When warm rains fall upon a drained soil, they descend through it into the drains, instead of running over the surface, and they carry in *warmth*, as well as ammonia and other useful gases, to the roots and increase their growth.

12. Water in a soil causes it to bake or compact. If drained, even clay land will be more pulverulent, or crumbling; it can be much more readily worked, and it yields better crops.

Several minor considerations might be added in favor of thorough draining, but are not the above amply sufficient to convince every one that it is of the highest value? The roots of plants run deeper and spread further, in a congenial, dry, pulverized soil, and they sustain a large growth above ground. Figures 1 and 2 are fair illustrations of the difference in the size and vigor of plants when growing on a shallow soil, and on one deeply pulverized and made dry by draining.

WHERE.

A careful study of the advantages above detailed, will show that nearly all soils will be benefited more or less by draining. The rare exceptions are those cases where there is a substratum of gravel, or porous soil, having an outlet, and lying so inclined as to be as effectual in carrying off water as a series of underdrains. But in no case can there be a *natural* provision for the circulation of air, to afford the advantages named above (6 to 11).

To ascertain what fields need draining most, dig a few holes two or three feet deep, at different points. If water stand in the bottom of any of these three or four days after a heavy rain fall, it is conclusive evidence that the soil will be benefited by draining. The more or less urgent need of draining, may be judged of from the rapidity with which water oozes in through the sides and bottoms of the holes, and the length of time that has intervened between the fall of rain and the examination. The amount of rain will also have an influence. If no water be found in the bottom of a hole three feet deep, say four days after a thorough soaking rain, there is no urgent necessity for immediate draining. Since the subsoil often varies greatly in the same field, it is well to sink a number of trial holes at different points. A good time to make observations of this kind is early in Spring, as it can then be readily determined whether the ground remains saturated with water for a long time, or is soon dry.

Another method is, to observe the condition of the *surface* during a moderate rain, and a few hours after. If the water soon runs over the surface, or the top soil remains wet for a day or so after the rain, we may know that the subsoil is already so saturated with water as to prevent its absorbing that which has fallen.

Fig. 3 illustrates the formation of a large class of soils. Here we have a mass of porous soil, *U, X*, with irregular beds of clay, *m, o*, running through it. It will be seen that from *a* to *b*, and

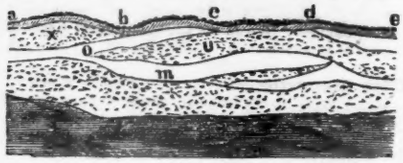


Fig. 3.

from *c* to *d*, the surface will be kept dry, because the water will rapidly flow down and off through the gravel. From *b* to *c*, and again from *d* to *e*, the clay beds under the surface will prevent the sinking of water, and draining is needed. These layers of different kinds of soil are generally discovered by observing the sides of a well as it is being sunk. The different layers sometimes each extend for miles, and sometimes but a few rods.

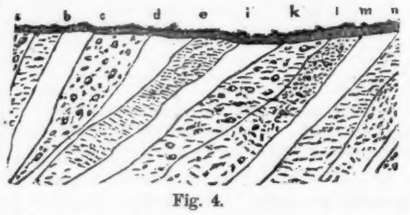


Fig. 4.

Fig. 4 illustrates another arrangement which is by no means uncommon. Here are alternate beds of porous and compact soils. The surface from *a* to *b*, *c* to *d*, *e* to *i*, etc., will be dry; while from *b* to *c*, *d* to *e*, *i* to *k*, and from *m* to *n*, the surface rests upon an impervious clay which retains the water. These beds, also, are sometimes of large extent, while a dozen or more of them sometimes occur in the same field.

For the American Agriculturist.

Benefit of Subsoiling—Examples.

One effect of this practice is to render the ground in the Spring dry and warm, earlier than where it is not so treated. Instances of this have lain under the writer's eye several years.

A gentleman in this neighborhood, who was building up a new home with ample surroundings of lawn and fruit gardens, was advised to subsoil the land for his young orchard. He did so. The adjoining land, devoted to lawn, was only plowed, but both were soon seeded down to grass. We have noticed for several years, that the young fruit orchard parts with its snow earlier in Spring, and becomes dry to the foot, earlier than the lawn. The grass shoots earliest there in the Spring, and grows most vigorously in Summer. As the land is of the same quality in both cases, and the treatment in all other respects has been the same, why should not these effects be charged to the subsoiling?

Here is another illustration: Four years ago, we ran a drain three feet deep across a lawn, for a distance of sixty feet or more. The subsoil was thrown back to cover the drain pipe, the top soil replaced on the top, and the sod covered the whole as before. Yet, for some reason, the line of the drain is now perfectly apparent to every beholder, the grass being greener and stronger along its track than anywhere else. Even in the midst of a severe drouth, and when the grass is shorn very close, that green line is unmistakable. Will any doubter deny

that this is owing to the thorough trenching of the land there? Suppose, then, that subsoiling, even less thorough, were practiced over the entire lawn, would not good results follow? G.

Sow Grass Seed this Month.

The grasses have many enemies, and it is frequently necessary to re-sow fields where the seed has not taken well, or where the roots have been eaten badly by worms. Wherever the grass is deficient, whether in pasture or meadow, it is a good plan to sow seed at this season. As a rule, seed enough is not used when meadows are laid down to grass. After several years experimenting, we have never found seed to "take" so well, as when sown upon the frozen ground, say in the morning, the latter part of March or early in April.

The alternate freezing and thawing at this early season, open crevices in the soil, and furnish the seed with that very slight covering which it needs; the heavy Spring rains also help to bury it. The use of the bush harrow and the roller would make the covering still more sure, but we have never failed of a good "catch" without resorting to them. In a few weeks the young clover and herds-grass make their appearance, and yield a tolerable crop the first season. This is a great deal better than bare patches in the meadow, which will soon be grown over with sorrel or weeds, if not occupied by grass.

Mangel Wurzels versus Corn.

W. D. M., of Warren Co., Mo., writes to know if it will pay to raise this root for Winter feeding, where Indian corn can be grown at the rate of 30 to 40 bushels to the acre. It pays abundantly at the East, where corn is raised at the rate of 60 to 80 bushels to the acre. If it were only of equal value per acre with corn, we would still raise it, because it gives a variety of food, which is as much desired by cattle as by men. But one can hardly fail to get double the value of fodder from an acre of these roots, that he would get in corn. We raised last season at the rate of 1600 bushels to the acre, on land that would not have produced over 80 bushels of corn. The roots at the market price were worth $400. The corn and stalks well cured, would not have been worth over $100. Land that will produce forty bushels of corn to the acre, ought to produce from six to eight hundred bushels of mangel wurzels. With thorough working and manuring, there is no difficulty in getting from twelve hundred to two thousand bushels per acre. They should be planted in drills two feet apart, and one foot in the drill, thinned out to one in a place, and kept free from weeds. The seed is from fifty cents to a dollar a pound, and it takes about four pounds to the acre. They should be stored early, and not be fed out until after Christmas.

Experience with Dwarf Broom Corn.

Mr. Horace Kingsbury, Niagara Co., N. Y., writes that having been interested in the manufacture of brooms for several years, he last year procured an ounce of Dwarf Broom Corn seed from the *Agriculturist* office for experiment. This was planted about the middle of May, on ordinary ground, not very rich. The brush was some weeks later in appearing, than the common variety, and remained inclosed in the husk, except the top end containing the seed, which prevented its lopping and becoming crooked.

The brush was of an extra fine quality, about the right length, and destitute of the hard thick stalk, frequently found in the middle of brush of the common kind. The only objection found was, that some of it was nearly worthless by not being sufficiently matured, but most of it made nice brooms. It was killed by frost on the 28th of September, and no seed appeared to ripen enough to grow. [Several inquiries are made for seed—we have none. Parties having good seed, might do well to advertise the fact.]

Stack Stables on the Prairies.

In the January *Agriculturist*, p. 8, a brief description was given of a "stack shed," an improvement upon the common method of stacking straw upon the ground for cattle to run to in Winter; but, as the writer stated, not the best plan. Mr. John Bennet, Ripley Co., Ind., describes a structure used on the prairies, as a temporary substitute for a barn, which is superior in many respects to the stack shed:

A pen of stout rails is built, 12 feet wide, as long as is wanted to accommodate the stock, and high enough for them to stand under. Rails are also laid on the top of this pen. An opening is left for a door. A rail fence is erected five feet distant from the pen, and entirely surrounding it, except the space left for the doorway. As the straw is threshed, it is stacked in the space between the fence and the pen, and upon the rails which cover the inclosure, thus leaving a warm dry stable. In this a manger can be built, or feeding boxes arranged; the cattle can be tied securely, and be kept comfortable. Light may be admitted through a window in the door. It might be well to set up one or two square tubes, made by nailing four boards together, to lead from the cover of the pen to the outside of the stack, for the purpose of ventilation; the straw stacked around them would hold them in place. Horses, sheep and other stock may be housed in the same way.

Mr. Bennett rightly says, cattle that live on uncut straw are not profitable to the owner. The straw, if used for feed, should go through a cutter and be mixed with meal, bran, roots, etc. This method, added to warm shelter will give satisfaction to the stock and their owners.

The Blue Jay in the Corn Field.

Farmers on every side are complaining loudly of the depredations of this handsome bird. It is not enough, they tell us, to quarrel with the robin and cedar bird, who pilfer our cherries, strawberries, and grapes. Nor is the crow our only enemy in the corn field, pulling up the grain as soon as planted. They can be frightened off by a few reports of the musket, or by a few objects of art and taste—mis-named scarecrows—scattered about in the field. But the Jay is bold and deceitful. He don't annoy us so much in the Spring as in the Fall, when the corn is ripening or standing in the stook. Nor does he make such a demonstration as the crow. He comes silently, and he keeps coming all day. His song has hardly music enough in it to compensate for his pilferings. And he steals not only what he wants for daily use, but lays up stores for cold weather. Deposits of corn are often found near this bird's haunt, in hollows of trees, and under the bark of those partly decayed.

What can be done with the Blue Jay? Has he commendable traits sufficient to compensate for the toll he takes from the field? What say those fully acquainted with his habits? As far as we are now advised, all we can say on the jay-subject is that "Eternal vigilance is the price of safety."

From Canada East.

THE HUBBARD SQUASH—STARTING SQUASH AND MELON PLANTS IN POTS—ONION CULTURE.

[The following letter, dated at *La Prairie*, near Montreal, L. C., we give mainly for its suggestions in reference to starting squash plants in pots. This mode must be of special value to those living in the colder regions of the Canadas, as well as in the northern portions of New-England, New-York, Michigan, Wisconsin, and in other places, where it is difficult to mature squashes, melons, etc., during the short season between Spring and Autumn frosts. It will be noted that the vines were not transferred to the open ground until June 6th. Where a hot-bed or cold frames are not at hand, the pots may be started in a well lighted, warm cellar—or better in a warm room—they will not flourish in the dark.—Ed.]

To the Editor of the American Agriculturist:

From your liberal distribution of seeds last Spring, I obtained four papers, all of which proved true and valuable; but I write mainly to speak of one of them, the Hubbard Squash. Owing to our late season here, the seeds were not planted until May 23d, and then in small pots, three seeds in each, all of which grew. The pots were placed in a spent hot-bed, where they remained until June 6th, when the balls of earth containing the plants were transferred to hills in the open ground. They produced a fair crop, with scarcely an imperfect fruit, and were housed perfectly ripe Sept. 15th; the average weight 13 pounds. With respect to quality, these squashes are beyond comparison before any other we have ever tasted; when well cooked and prepared, they are truly excellent. They have a peculiarly agreeable flavor of their own, which we have not found in any other plant of the same tribe. The skin or shell, as it grows here, is very hard, requiring a smart blow with an ax to open it. Are they not the original cocoa-nut squash? We count this squash the greatest acquisition in kitchen vegetables since the introduction of rhubarb and tomatoes.

I also received a copy of the pamphlet on Onion Culture. This is certainly *one* of the best, if not *the* best work on the subject in the English language. Just think: the experience of 17 straightforward, practical men of common sense, condensed into some 30 pages. I have been a successful cultivator of onions for the last 20 years, yet I have derived from this work many valuable suggestions for future practice. There is, however, one feature of the work which deserves more especial notice, being seldom found in works on gardening, viz., the information given on raising and saving the seeds. It is evident that professional writers on gardening withhold much useful information, as to the details of seed saving; it may be they think it would injure the trade, but this is very unsatisfactory to the inexperienced inquirer. However, in these essays on the culture of the onion, we have everything required for the information of beginners—how to raise good seed—how to prepare the ground—to sow the seed, keep out weeds, to harvest, and to bring the crop to market. In other words they contain, as all such works ought to do, plain, practical, reliable information for the million.

JOHN WARCUP.

REMARK.—What Mr. Warcup says of the Onion Pamphlet is undoubtedly true. Our first edition of 1000 copies is all gone, and we have

yet to hear of one who has perused it without receiving much useful information. We are having a second edition printed, which will be ready by the time this paper goes to press. Any one at all interested in onion culture will find the work highly valuable. A copy is sent post-paid to any address on receipt of 21 cents. We shall also add it to our extra premiums for March. See last page—*Publisher.*]

Editors Humbugged!*

Editors commonly have the credit of being sharp fellows—they have *friction* enough to give them a keen edge. But even they get taken in now and then. *Example:*—For some time past we have been receiving letters from cotemporaries in different parts of the country, asking us to collect or inquire after bills at an "advertising agency," nominally located in Wall-street. We have called or sent to the specified place several times, but can seldom find anybody in, and when any one is there, it is a boy, who has a ready answer, generally to this effect: "One of the firm is absent on business at Chicago, and the other is sick at home."——The parties are very shy, but after considerable inquiry and investigation, the matter *appears* to stand about thus: One of those benevolent, "retired clergymen," whom we have taken occasion to show up, and who is professing to be very sincere in his efforts to relieve suffering humanity, is carrying on his operations under a variety of names. Under one name, he is dispensing medicines in Williamsburgh; under another name he is doing the same thing in Brooklyn; under another name, he is teaching women in New-York, an art which will "afford them an easy livelihood;" and how many other enterprises he carries on we can not definitely say, though we have reason to believe the same man is at the head of at least half a dozen, all under different names. Under a still different name, or firm, he has an "advertising agency," through which he sends out to the country papers a variety of advertisements of all his other swindling enterprises, under their various names, and in their different locations. At first, as an "advertising agent," he paid for a few advertisements, to lull suspicion and get credit. Since then, he has sent out a large number all over the country, with fair promises to settle up in due time *after* the publishing of the business cards. Having thus published his various enterprises to the amount of many thousands of dollars, both himself and his fictitious partner, are conveniently absent whenever called for.——We have good reasons for withholding names at present; but have said enough to show how the thing is carried on. Our cotemporaries may draw their own conclusions.

Publishers can hardly be too careful in accepting "promises to pay" from unknown "advertising agents." Such men as S. M. Pettengill & Co., and John Hooper & Co., can be relied upon for honesty and promptness.

* Many Lottery Schemes, and various other swindling Circulars, etc., not needing hurried attention, have been received, and being crowded for room, we omit the usual chapter on humbugs this month.

"Giant Wheat."

The above sketch we have engraved for the *Agriculturist* from one appearing in a foreign journal. This is claimed to be an accurate representation of a new variety of wheat, of which almost incredible accounts are given. Thinking that there must be at least something in the affair, we sent for a quantity, and have obtained two bushels, at an enormous expense, which we have put up in small parcels, and placed in our free seed distribution, No. 140, so that those of our readers desiring to try it, can obtain enough for a beginning, without cost. The berry is very large, and gives promise of being an acquisition. We read accounts of its having produced over 70 bushels per acre. A single grain is said to have produced 72 heads, containing 6,480 kernels, or 90 grains to the head. It can be rapidly multiplied, and the parcels we send out over the country, with careful culture, will yield a large amount of seed for another year, if found valuable. It is a winter wheat, and, of course, can not be sown until Autumn.

Painting Buildings.

This topic has appropriately occupied the attention of several "Farmers Clubs" the present winter. For the first coat or "priming," there appears to be nothing better than the old method of using white lead in oil. A thin mixture fills the pores of the wood better than a thick one. For a second coat, if three are used, a mixture of white lead and zinc is good. For the final coat, whether it be the second or third one, we prefer the zinc paint for white. Though costing more per pound, it goes further, and is on the whole quite as cheap as lead, while it retains its clear white color much better than lead, which is tarnished by sulphurous gasses arising from the manure around barns and stables, and from the sink drain and other sources around the house. There is always enough of sulphuretted hydrogen in the air to gradually darken any surface paint containing lead.

Remarks on "Bone Spavin".

When inflammation of the lining membrane of the horse's hock joint is caused by a strain, a severe blow, or a shock, unless it be relieved, ulceration will follow, the oily fluid contained in the joint will be absorbed, the cartilaginous (gristly) linings turn to bone and grow together, and the joint will be more or less injured according to the extent of the disease. This form of spavin may produce no external swelling, and is then not easily detected. Unless the disease be sufficiently extended to cause permanent lameness, a horse after a few moments' driving, and becoming "warmed up" will travel almost with his natural gait. A close observer may detect a slight variation from the proper motion of the leg, particularly the failure to slightly turn the hoof outward, but this is all the external indication. A purchaser should insist on examining the horse when first led from the stable after a period of rest; any existing lameness will thus be more readily perceived.

Spavin is quite frequently shown by enlargements upon the joint, resulting from the ligaments which bind the joint together having been hardened into bone; and from a deposit of bony matter. If this deposit be directly upor the side of the joint, so that the tendons by which the leg is moved, must play over the swelling, there will be lameness. It often occurs, however, that the enlargement comes below the joint, when it may not greatly interfere with free motion of the limb, nor detract much from the value of the horse, although all such difficulties are blemishes, and lessen the market value. Bony deposits of the same character may be formed on the hind leg, quite distant from the joint, and also upon the fore leg, in which cases, though of the same nature as spavin, the disease is called splint.

All these difficulties result from abuse of the animal by overtasking, particularly while young, before the ligaments and other parts of the structure of the joints have hardened sufficiently to resist the strain put upon them. *With proper usage they need never occur.*

Harsh remedies for this disease, as burning, punching, etc., formerly so much in vogue, are now giving way to more rational treatment. A permanent cure for confirmed spavin need not be looked for. Where no perceptible lameness exists, and the growth of the excrescence is not increasing, let it alone, for by "tinkering," the blemish may become a permanent injury. In the commencement of the disease, the animal should have entire rest and good feed, for months if necessary. While inflammation exists, Mayhew recommends the application of poultices (flaxseed), and to rub the part well with a mixture of belladona and opium, equal parts of each, rubbed down with water; or to rub the enlargement with equal parts of chloroform and camphorated oil. After the pain has subsided and the heat has been reduced, an application of one part Iodide of lead mixed with eight parts of simple ointment is recommended, to reduce any enlargement, or at least to prevent further bony deposit.

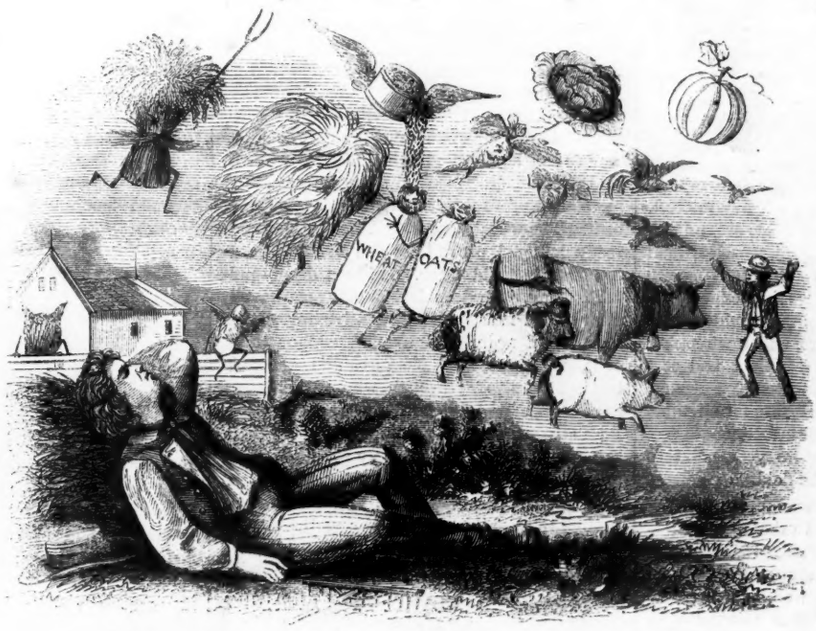
Large Cattle.

According to the Boston Journal, the largest cow ever brought to the Brighton market, was sold there a short time since. She weighed, when alive, 2,650 pounds, and when dressed, 1,850 pounds. She was raised at Westmoreland, N. H., by Josiah Bennett, and was six years old. She was small, however, compared with the "Haxton Steer" sold in New-York in January, 1860, for $850. He was raised and fed by Mr. Elnathan Haxton, of Dutchess Co., N. Y.; weighed alive 3,452 pounds, and 2,319 pounds in the dressed quarters, which was 67½ pounds of beef to the 100 pounds live weight. He weighed 167 pounds, net, more than the celebrated Washington ox, killed some years since, which was previously cited as the largest ox ever killed in New-York.—*Ed. Amer. Agriculturist.*]

For the American Agriculturist.

A Profitable Dream—How to Pay Interest Money.

MR. EDITOR: A dream, which I had a year ago last Summer, has done so much good here, that the neighbors say an account of it ought to be printed. I therefore send it, and a drawing representing the scene described, hoping it may *wake up* some others. One day in July, after a pretty good "nooning" passed in reading some of the articles on manures in the *Agriculturist*, from which I was interrupted by a call to drive the cow and pig out of the corn field, I sat down to rest on a pile of straw near the barn yard, and presently fell asleep. The strong smell of *ammonia* from the manure heap in the yard, together with what I had been reading and thinking of, probably gave rise to the singular vision.



WASTING MANURE—WHAT RIP VAN WINKLE, JR., SAW IN A DREAM.

I was in great trouble in my dream; the day for paying interest money had come, and a large amount remained to be made up—which, by the way, had often been a great vexation. While trying to contrive ways and means to meet it, a man presented me a paper, on which was printed: "Go look in the barn-yard!" Thither I went, and commenced digging with a shovel, expecting to find a pot of money. When a few shovelfuls had been thrown aside, a dense steam poured out, having such a strong smell, that it caused me to step back; when suddenly there appeared a wonderful phenomenon. The whole manure heap seemed alive with farm products of every kind, some of them in the most fantastic shapes, which came racing past me, trying to escape. First a huge pumpkin bounded along, and sprang into the air like a bombshell, then followed a noble cabbage, and after it a whole volley of roots. There were fowls that flew away cackling; bags of grain, bundles of hay and wheat, with grotesque heads and spindling limbs; and cattle, sheep, and hogs, all rushed out pell-mell, while I ran frantically to stop them and secure so rich a prize. My exertions awoke me, and I have not been asleep on that subject since, for this interpretation of the dream came like a flash: "*Every heap of manure wasted by leaching away, or by escaping in the form of gas, is equivalent to a loss of a shock of wheat, or a bushel of corn, or a fat pig, or sheep, or milch cow.* Then I remembered how often the *Agriculturist* had said, use muck to absorb the liquid manure, and to arrest the ammonia, and on the spot my mind was made up to put it in practice; for on one of the back lots of my farm are about three acres of as good muck as was ever dug. Accordingly, in the Fall I employed all possible leisure in preparing a pile of it for winter use to mix with the yard manure, and last Spring I had a heap of compost that made the corn field *sing*—to the tune of eighty five bushels to the acre. Before that I thought fifty bushels a great yield. Besides this, there was enough to top-dress a meadow of ten acres, and increase the yield of grass from one tun to more than two tuns per acre; and such vegetables as my garden turned out, would do a market-man's eyes good. *I had no trouble, this year, when interest day came round!* Nor was this all. The neighbors who witnessed the results of using muck, have commenced trying it, and there has been at least twice as much good manure made within two miles of here, this winter, as during any year before. RIP VAN WINKLE, JR.

[REMARKS.—A lucky dream indeed! It is a favorable omen that the *Agriculturist* is beginning to trouble people, even in their sleep. There are a good many Rip Van Winkles yet, that need to be disturbed in their easy-go-along ways, and we are glad to see increasing signs of restlessness. But what shall be done for the great mass who are yet without the sphere of its influence? We want to get the paper into *their* hands. Who will help in this matter? On the last page of this paper the Publisher offers liberal pay to those who will this month take the trouble to hunt up some of the outsiders, and persuade them to *try* the *Agriculturist* for a year.]

How Mr. Jones tilled his Land.

(Concluded from pages 8 and 40, which see.)

After the removal of the wheat in the harvest of 1856, the field lay in stubble until late in November. No clover seed having been sown in Spring, there was little feed for cattle, so that after the hogs had gleaned the stubble, there was nothing to tempt an animal to go upon it. I ought to have sown clover seed upon the ground in the Spring; the feed after the wheat harvest, would have more than paid for the seed, and I should have had some clover sod to turn under. I do not believe any farmer can afford to let good land ever lie idle. If clover is growing upon it when not in use for other crops, the clover leaves are constantly gathering manure from the air, and storing it up in the roots and leaves ready to be plowed under. A dollar's worth of clover seed on an acre is never lost entirely, and it seldom fails to return full ten-fold.

In November I obtained a subsoil plow from New-York, (you, Mr. Editor, doubtless remember getting it for me, as I could not find one in these parts.) I put a yoke of oxen, and a horse for a leader, upon a common plow, and started them around a wide "land." With another yoke of steady, strong oxen, I followed *in the furrow* with the subsoil plow. The first plowing was about ten inches deep—a little less on the part which had not been plowed deep in my first experiments. Owing to the frequent occurrence of stones in the deep soil, I had to go very slowly with my subsoil plow, and often stop and raise the implement, and I finally kept a man along, with a crow-bar and pick, to loosen and raise out some of the larger stones. They were left on the plowed surface, and gathered off during Winter, when the ground was frozen so as to bear up the team, but thawed enough on the surface to loosen the stones from the soil.

The slow progress of the new implement gave opportunity for frequent resting by the forward team, so that the single yoke and horse were able to plow much deeper than if they had gone on steadily. For the first three days we did not get over more than half an acre a day. It took us nearly sixteen days to go over the ten-acre field. As there were three men, a boy, two yoke of oxen, and a horse, the expense would have amounted to nearly $80 if I had hired it done; but at that time we had little else to do, and the whole actual expense, including cost of sub-soil plow, I set down at not more than $50, at most.

The subsoil plow went down from five to seven inches below the other plow, so that the ground was worked mellow about 16 inches deep on the average. Of course, the sub-soil plow brought none of the under-soil to the surface. After the surface plow opened a furrow, the subsoil plow stirred up the soil below, and the next surface furrow was turned upon the loosened mass.

During the Winter of 1856-7, I hauled out about ten wagon loads (say 30 bushels each,) of yard manure, and piled it in heaps. In the Spring, the field being under-drained, was soon dry enough to work. The manure was spread, and plowed under, and mixed with the soil about six inches deep. Corn was then planted in the usual manner, the corn being soaked in tar-water, and rolled in a mixture of lime and plaster. I had a splendid crop—better than any thing else in the neighborhood. During a dry spell, when other corn was curled by the drouth, this field was green and fresh, and grew vigor-

ously. I measured one average acre, which yielded 82½ bushels of sound shelled corn, besides nearly five bushels of "nubbins." These last were from scattering stalks on spots where there chanced to be a quantity of the deeper subsoil brought to the surface. The best corn was on the part where I had run the plow 12 inches deep during my first experiment. The fact is, the soil was dried out by the drains so early, that it suffered little from the Spring rains, and it was worked so deeply by the subsoil plow, that the roots went down below the effects of the drouth.

You will see by what I have stated, that every acre of this field had cost me about $21 for draining and subsoiling; but suppose it had cost me twice as much, or $42 per acre, my extra corn crop would have paid a heavy interest. The average yield on similar fields around me, and on another field of my own, was less than 40 bushels per acre, and I estimated that 40 bushels of corn extra, for the same expense of plowing, planting, and hoeing, would pay a good interest on $40 an acre, and a whopping interest on the $21 an acre my field had cost me. These improvements, these deep drains, and deep working of the soil, are for all time, and amount to so much solid investment to pay a round interest in every future year. But to go on with the history of the field.

The corn stubble was plowed under in 1857, and wheat sowed upon it. In the Spring I put on a double dose of clover seed, sowing it upon the frozen ground, on still mornings the last week in March. It took well, and after the wheat was off, the ground was covered with young clover. Though the wheat had no clover sod turned under to feed upon, it showed the good effect of the manure applied to the corn. It bid fair for 35 bushels per acre, as none of it was winter-killed, which I attributed to the fact that the ground was kept free from surface water, by the drains. The midge, however, did some injury, and I only harvested 27 bushels of merchantable wheat per acre. But this was twice as much as the average on other fields in the neighborhood. The early start it got in Spring, by reason of the drainage, pushed the crop partially ahead of the insects.

My clover crop was so good that I concluded to mow it in the Summer of 1859. In the Autumn of that year I let the aftermath or second growth get well up, and then turned it under as deeply as I could do it evenly—intending to sow it to wheat. But the increasing prevalence of the midge rendered the wheat crop a doubtful one, and I let the land lie and freeze over winter, carting on fifteen wagon loads of manure to the acre, while the ground was frozen.

In the Spring of 1860 I spread the manure and plowed it in rather shallow, so as not to greatly disturb the clover sod. My first intention was to plant corn, but the low price of that crop, and the higher price of potatoes, led me to try the latter. I therefore provided about 20 wagon loads of a compost made of rotten manure, leaves, swamp muck, with which 20 bushels of plaster were mixed. This was used in the hill, thus: First, a hole was dug, then a little of the compost put in; then a handful of ashes sprinkled over, and a little soil thrown in for a bed for the potatoes. The manure was not very warm or stimulating, there being more leaves and muck than of yard manure, and I put the ashes on, not only to quicken the manure, but also to neutralize any excess of stimulus which might rot the potatoes, if it is possible for them to rot on such dry, drained land.

This is the whole history of that field from its clearing up to that crop of "big potatoes" made famous by the "dialogue" between neighbor Smith and myself. I did not measure the entire yield last Autumn, but one acre, which was about an average, measured up 318½ bushels of fine, plump, mealy potatoes. As the highest offer for the crop to be taken at the field, was 30 cents a bushel, I piled them in heaps, covering with straw and earth. I hope to realize 37½ to 40 cents per bushel in the Spring.

In concluding this long narrative, given so minutely because you asked it thus, I will say, that I am more and more convinced of the *profit*, as well as pleasure, of cultivating only so much land as can be thoroughly tilled. The ten-acre field I have described will certainly pay me more clear profit than any two fields along side of it. The wheat, clover, and potato crops, already gathered, prove this; and it stands to reason that it should be so. It has a deeply pulverized soil, with deep drains to always keep it clear of the influences of excessive wetness or dryness. I never pass by the field, or think of it, without a real pleasure, and gratitude to the *Agriculturist*, through whose teachings I have been led to bring it to its present condition. I am at work upon an adjoining field, and shall, as rapidly as possible, treat my whole farm in the same manner. I can make it pay as I go, and if I could not do this, I would sell off enough to raise the means to bring the rest up to the highest fertility. SOLOMON JONES.

How to make Oyster Shell Lime.

The shells of oysters being a very pure carbonate of lime, combined with a little phosphate, and animal matter, are more easily reduced to quick lime, than the stone. The best method is to prepare a kiln especially for the purpose.

The most convenient location for a kiln is upon a side hill, or in the face of a ledge, where the shells can be dumped into the top of the kiln directly from the cart. The forms of lime kilns vary, but the best is that of the frustrum of a cone, (like a sugar loaf with the top cut off,) which permits the ignited mass in the upper part to settle down freely, as the lower part is drawn out. It may be made of any capacity or hight, according to the quantity of shells it is desirable to burn at once. If the business is to be carried on extensively, there is economy of fuel in having the kiln large. Any kind of stone or brick may be used for constructing the walls. The thicker and stouter they are made the better they will retain heat. A foundation wall is first raised three or four feet high inclosing the pit, into which the lime falls after it is burned. Some kind of grate must be provided, like the bottom of a coal stove or furnace, for the bottom of the kiln. This is necessary both for draft and for letting down the lime. It matters very little about the finish of the work. A very rough kiln will burn good lime.

In charging the kiln for burning, a layer of brush, dry wood, or charcoal, is put upon the bottom, in sufficient quantity to make a strong fire. Then a layer of oyster shells about a foot thick, then another of any convenient fuel, and so on alternating until the hole is filled. A very thick layer of shells may be put on at the top, as that has to receive all the heat from beneath. Almost any kind of combustible material may be used for burning the shells. In cities the hard coal screenings and dust, that can be had very cheap, are used for this purpose. They make a very powerful heat. On the farm, brush, old stumps, sods, peat, or any vegetable matter, can be run through the kiln, and add much to the value of the burned shells.

If one does not care to be at the expense of a kiln, he can reduce the shells by burning them in alternate layers, with brush, or wood. This of course will require a great deal more fuel, and is not to be recommended where economy of fuel or labor is desirable. The shells can not be burned so perfectly, but the most of them will become soft, if they do not crumble, and will soon break up in the soil. To burn them in this way, an excavation should be made in a side hill, or where this is not practicable, a circular embankment of sods or earth should be raised three or four feet high, to confine the heat as much as possible. CONNECTICUT.

Manure—Queries, and Answers.

BONES—HORSE MANURE—GUANO—LIME.

J. M. Hazard, Bristol Co., Mass., asks: "Which is the best and most economical: ground bones at $50 per tun; horse manure at $5 per cord, to be hauled three miles; or Peruvian guano at $65 per tun; to be applied to grass land, a dark loam on a sandy subsoil?" *Answer*—It would cost $1 more to haul a cord of manure than a tun of guano or bone dust, so that we may call the horse manure $6 per cord. We then have, say 8¼ cords of manure, against one tun of bone dust; and 11 cords against one tun of guano. For all ordinary soils, we should decidedly prefer the horse manure, if of good quality—especially if to be mixed with the soil. When to be spread as a top-dressing on grass land, the case is not so clear. If the manure were pretty well rotted and put on early in Spring or in the Winter, on a surface where it would not be washed off by rain or melting snows, the manure would probably be mostly soaked into the soil. If in an undecomposed state, or applied late in Spring, or during Summer, much of it would be wasted in the air.

In the particular case referred to above, the soil is described as a "dark loam." If this dark color be caused by vegetable mold, and not by metallic salts, it is reasonable to conclude that organic matter is not so much needed as an alkali (lime or ashes), or a stimulant like guano, and the order in which we would place the above manures would be: 1st, guano; 2nd, bone dust; 3rd, horse manure.

The probability is, however, that a dressing of from three to six barrels of lime to the acre, well slaked, and sown broad cast, would be quite as effective as any one of the fertilizers named—particularly if the soil be at all inclined to wetness. This opinion is based upon the supposition that the dark colored loam already abounds in organic matter, which would be rendered active by the addition of an alkali. If the soil be quite dry and warm, and still abounds in black vegetable matter, we should try some lime; or try lime and gypsum (plaster), on a part, and on another part try some guano.

The probable best mode of procedure will depend upon the particular condition of the soil, and we can only indicate the items to be taken into consideration in all such cases. To present a general rule for all soils, even those apparently similar, is like offering a "universal pill." It would be a pleasant exercise, and one useful to himself and to others, for Mr. Hazard to try separate plots, side by side, with each of the fertilizers referred to. If this be done, we would like to hear the particulars and the results after a year or two of observation.

Gas Lime—Experience in its Use—Valuable Information.

[The rapid introduction of gas into cities and villages, and the large amount of lime used in purifying the gas, which is offered to farmers at a cheap rate, makes the subject one of no little importance. The constant inquiries received, we have usually answered by forwarding a copy of the *Agriculturist*, Vol. XVII, No. 1, (Jan., 1858,) in which the subject is ably treated by Prof. Johnson of the Yale Agricultural School. We can not better meet the demand for present information, than to republish Prof. Johnson's remarks; to which is also appended an account of some recent experiments by a subscriber in Dracut, Mass.—ED.]

LETTER FROM PROF. S. W. JOHNSON.

To the Editor of the American Agriculturist.

The various contradictory opinions held among practical farmers, with reference to the value of gas lime as a manure, are justified by the extreme variableness of its composition. When perfectly fresh from the gas-purifiers, it is in general a rather *dangerous* application to any growing crops, or in contact with seed. Mr. Solomon Mead, of New-Haven, Ct., informs me that he once applied it in the hill to potatoes, and they never came up. A gentleman in Wallingford, Ct., applied it to grass land and to the roots of peach trees. The trees were destroyed, and the grass severely scorched, so that it did not fairly recover until the ensuing year.

It may be used in the fresh state upon naked fallows, especially when it is desirable to free the soil from slugs, injurious worms, or couch grass. What its action is upon vermin may be inferred from the fact, that when fresh, it contains a substance (sulphide of calcium) which is the actual ingredient in the depilatories and cosmetics, which are articles employed for removing hair. There is an account of its being thrown into a hog-pen with the intent that the swine should incorporate it with the compost heap. This was effectually accomplished, but at the expense of the bristles and hair of the hogs, which were, in a great measure, removed by the operation.

It is thought, too, that the odor of the coal-tar which is mixed with the gas lime in greater or less quantity, serves to dislodge insects and vermin, and it is sometimes sowed in small quantity over young turnip plants to prevent the attacks of the turnip-fly. In Scotland, it is largely applied to moss-land which it is intended to reclaim.

The quantity of easily soluble matters, (sulphide of calcium, sulphite and hyposulphite of lime,) is so variable, ranging according to analytical data, from 2½ to 15 parts in 100, that we may readily comprehend how some gas limes may be quite harmless if applied in moderate doses even to growing crops, while others, rich in these soluble and deleterious matters, destroy all vegetation.

It has been supposed that fresh gas lime is valuable on account of the *ammonia* it contains. When the gas-lime is emptied from the purifiers in which it has been exposed to the gas, it has quite a pungent odor of ammonia, but the quantity, though enough to affect the nostrils, is, in reality, quite too small to have any great manuring value, and entirely disappears after a few days' exposure to the air. Mr. Twing, of this Laboratory, found in a specimen of perfectly fresh gas-lime from the New-Haven gas-works, but 8-10ths of *one per cent* of ammonia. In a gas-lime from the gas-works at Waterbury, Ct., which had been exposed to the air for one week, he found but about 4-100th of *one per cent.*

Fresh gas-lime may be advantageously used in composting swamp muck, etc.

By full exposure to the atmosphere, as when scattered over fallow-ground, after a time it becomes innocuous. The soluble caustic ingredients are converted into no less valuable a substance than gypsum (plaster), and then, after its odor and bitter burning taste have disappeared, it acts precisely like a mixture of lime and gypsum. How rapidly these changes take place, I have no means of knowing without making actual trial, but should presume that if a dressing of gas-lime be incorporated thoroughly and uniformly with the soil *one week*, before sowing or planting, no harm could result to the crop. [*One month* would be safer.—ED.]

In conclusion, your correspondent is recommended to use it, if he can get it more cheaply than other lime, at the rate of 50 bushels per acre on heavy soils—or 10 to 20 bushels on light soils—making one application in three or four years. If fresh, it should be put on the bare soil and not on a crop. In case of corn or potatoes, it may be scattered between the rows and worked in at hoeing time. If the gas-lime is white and tasteless after exposure to air for a time, it may be sown like gypsum.

It should be remembered that a wet soil will not be much benefited by lime, nor by any manure, unless in a dry season; and that a light dry soil is soon spoiled by lime unless a good supply of organic matter be maintained in it, by means of stable manure, muck composts, or green manuring. Lime and plaster, too, are at the best, even when they exhibit their most extraordinary effects, but partial fertilizing agents. S. W. JOHNSON.

EXPERIENCE WITH GAS LIME.

J. A. S., of Dracut, Mass., under date of Jan. 28, 1861, writes to the *American Agriculturist* thus: "....In the Spring of 1859 I bought two barrels of gas lime from the Lowell works, and tried a portion upon a row of early potatoes, beside another of the same kind without any gas lime. One half of each row I set with sprouts. I could perceive no difference at digging, except that the sprouts were a little later than the rest. The gas lime had no apparent effect. On the 7th of June of the same year, I scattered the remaining 4½ bushels broadcast, before plowing, upon ½ acre of potatoes on rather wet land, by the side of another ½ acre of land, a portion of which was, perhaps, a very little dryer. About a dozen hills came up on the gas limed part, but these afterwards succumbed. Those without lime came up finely, progressed rapidly, and, with the exception of a few rows, gave a fair return, considering the late planting. The seed was a late variety. You wish us to give failures as well as successes. That was *my failure.*

Last Spring, a neighbor thought *he* would try it, as it only cost two cents a bushel; so he turned over his sod, and put from one to two quarts of the stuff in each hill, covered it slightly with dirt, and planted his potatoes. The corner where the gas lime was buried could be easily distinguished a quarter of a mile off, it being perfectly bare. The potatoes are yet to appear above ground.

Again, in the Fall of 1859, having suffered some weeds to go to seed by the side of a wall, and seeing the effects of the gas lime on my potatoes, I applied a barrel of it, fresh from the works, upon about 800 square feet, and let it remain on the surface all Winter. Very early in the Spring I harrowed it in, then turned it under, and sowed rye for soiling. The rye appeared earlier, was of a deeper green, headed out five days sooner, and was six inches taller than that by its side not treated in this manner. I afterwards plowed again and put in corn fodder. The fodder was decidedly "yallar," though I was very sure I did *not* sow the yellow kind, and though it appeared earlier than the rest, it grew to *be only about eight inches high!* There were but few weeds, however, on that part.

Again, I composted it with muck and horse manure, using lots of muck, and gave a liberal dressing to a plot where I wished to start cabbages for transplanting. They were very strong, thrifty plants, and I noticed when I transplanted them, that where there was a lump of gas lime and muck, the cabbage roots were woven round it, taking it up with them. (By the way, 250 plants which I *puddled* in a liquid of home-made guano never flagged, though the sun came out immediately after setting out; and moreover, they paid me twice over for my extra pains. I begin to see how valuable cabbages are for stock, now that the 2000 heads I raised between my early potatoes and peas are gone, and I only regret that I have not 2000 more.)

My experience with cut worms has not been quite as disastrous as some of your correspondents, thanks to hints from you. I *put in plenty of seed and to spare*, according to the advice of the *Agriculturist*, and at the first hoeing I kept a good watch for the cut worm, both where a spear was wilted, and every where else. Scarcely a hill did not have at least one. I searched till I found him if a stem was cut, and taking him on my hoe, with or without dirt, as it happened, and with the sole of my boot made him disgorge forcibly. I thought, as I crushed each one, that *he*, at least, would neither trouble my corn again, *nor produce progeny for another year's supply.* They disappeared suddenly. Where they went to, or what form they assumed, I can not tell, but would much like to know.

My conclusions upon the subject of gas lime I give for what they are worth, though being a novice, and my experiments imperfect, I speak with diffidence, yet hoping that my "one item," when taken in connection with others you may receive, may be of use to you at some time, and consequently to myself. To cabbages and rye it *did seem* to be a benefit. Applied to corn in any manner, I have been informed, it is injurious, and I think it would be much the safest mode to compost it with a goodly quantity of muck, and perhaps muck and manure. In that manner it gave me the best returns. But whether its value, according to cost, is greater than stone lime, to compost with muck, of which I have an inexhaustible supply, I would much like to know.

REMARKS.—A careful study of what Prof. Johnson says, will, in part, explain the results with J. A. S., and the contrary experiences of many others. The crude or fresh lime from the works is poisonous. After thorough compostting with muck, or after sufficient exposure to the air, and especially to frosts, on the surface of fallow or plowed ground, it loses its noxious properties, and is then probably quite as valuable as common lime, owing to the amount of gypsum formed by its decomposition.—ED.]

Coal Ashes.

To the Editor of the American Agriculturist:

What to do with coal ashes, was with me a very important matter. A friend suggested, after sifting them, to spread them on my stable floor, under the bedding. This I did, and by removing them every few days, I have prevented the escape of the ammonia and preserved that. All the moisture is absorbed, and my stable is sweet and clean. The coarse cinders, etc., I use for walks. Can any of your readers suggest a better disposal of them?—C. C. [Unless plenty of muck is used for bedding, we would not advise mixing any kind of ashes with manure in the stable. The alkali of the ashes will hasten the fermentation, and promote the escape of valuable ammonia. Better spread the ashes directly upon the soil.—ED.]

The greatest pleasure of life is love; the greatest treasure, contentment; the greatest possession, health; the greatest ease, sleep; and the best medicine, a true and faithful friend.

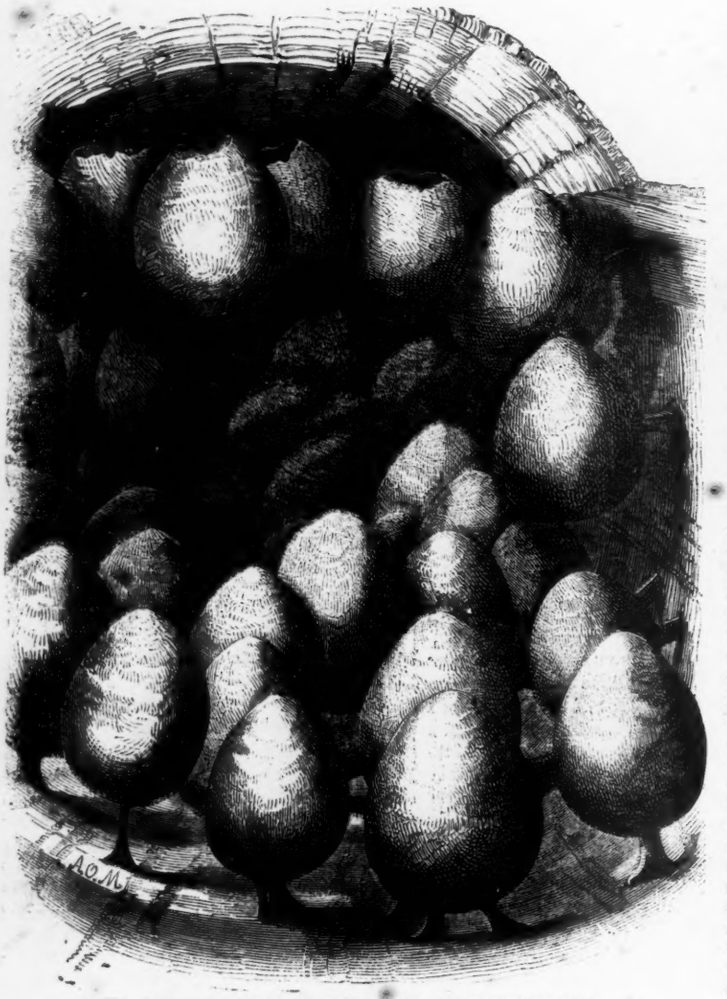


Fig. 1—HONEY CELLS OF THE JICOTE, OR STINGLESS BEE.

Stingless Bees of Central America.

[Those who chanced to call at the Office of the *American Agriculturist* in August last, had the pleasure of seeing two short logs, say 3½ feet long and 10 to 12 inches in diameter, from an aperture in which there were issuing two kinds of bees, somewhat like our common bees in general form, but differing in size and color, one of the varieties being nearly as large as our bees, and the other hardly a fourth the size. From what we saw of them and learned of their history and their habits in their native country, we incline to the opinion that they may yet be introduced into our country, at least into the Southern or warmer portions of it, and perhaps prove a great acquisition. Aside from their practical utility, they are interesting at least, and at our request, Mr. A. O. Moore, who brought these specimens, and who observed them somewhat extensively in their native locality, has prepared for the *Agriculturist* the following notes and the accompanying engravings—ED.]

The sting of the bee has been considered an admirable contrivance, by which a weak and otherwise defenceless creature is enabled to guard from theft the sweet stores nature has entrusted to her; but there are thousands of persons constitutionally nervous or sensitive to the effects of a sting, who would hail with pleasure an improvement in bee-culture whereby they might enjoy the sweets of the hive without its stings, and study its wonders without the danger of the excruciating wounds which are so severely inflicted, on the uninitiated at least, by the little community honored by the investigation.—Whether or not it is among future possibilities, that we of this rigorous climate shall ever be able to enjoy this bee keeper's millenium, it is interesting to know that in Central America, the forests everywhere, from the torrid sands of the sea-shore, to the colder mountain regions at least 8,000 feet above the sea, abound with *stingless bees* of many varieties, which have been domesticated by the people, and produce honey of excellent quality, and in considerable quantities. The honey producing bees indigenous to that country, vary in size from the small yellow bee shown in fig. 8, to that in fig. 6, which is nearly as large as our common bee. They vary, too, in color; yellow, brown, and black; black, with yellow legs, and yellow, with black legs. Some have stings too, but generally they are without. Some have a deliciously flavored, sweet honey; while that of others contains so much acid that, when mixed with water, it forms a refreshing drink very much like lemonade. In some places I found a stingless black variety that frequented the houses just as our flies do—which they closely resemble, except that they have the good sense to go to their own homes when they have secured a "pocketful," and do not *lodge* upon the walls and furniture. The quantity of honey varies with the size of the bee, and the number in a colony. The smallest, produce only a teacupful in a year, while the largest produce from six to fourteen bottles of 2½ lbs. each. As far as my observations have extended, however, they all resemble each other in their general habits and method of forming their brood cells and honey receptacles, and in these particulars differ very essentially from our bees, which, as is well known, build their brood cells of wax; what is termed the comb, being a double tier of hexagonal tubes. The exception to this is in the cells intended for rearing the Queens or females. These are somewhat irregularly egg-shaped. In the regular "comb" there are cells of two sizes, the smaller intended for the neuters or workers, the larger for the drones or males. The receptacles for honey are not different from the brood cells. The drone cells are generally elongated and used for the honey. In all these particulars the Central American bee is of different habits, as will be seen by the accompanying drawings, which, excepting Figs. 7, 8, and 9, were made from the largest variety I found, and the one most valued for the quality and quantity of its honey. In Costa Rica and Nicaragua, this variety is called *Jicote* (pronounced *hee-co-ty*). Passing through San Salvador, going northward, this variety was nowhere to be seen; but in Guatemala, it reappeared in great abundance, and is there called "*Colmena grande*," which merely means the large bee. The general character of the interior arrangements of all these bees is the same, the smaller bees having brood cells and honey receptacles of a correspondingly small size, so that these drawings and descriptions will give the characteristics of all, at least of those which inhabit the cavities of trees.

Fig. 2.

First, then, the brood-cells differ from those of our bee, in being arranged in single rows (see Fig. 3), but in tiers one above the other, having a space between the rows for the passage of the bees. They are less distinctly hexagonal, being nearly circular, formed in part of a paper like substance, but strengthened and supported by wax, and the entrance to each cell is closed by a wax "cap" during the transformation of the chrysalis. Enveloping the entire nursery department, are galleries formed of thin sheets of wax, which, in our engraving, are removed partially to give a peep into their domestic arrangements. Two of the cells are opened so as to show the young imperfect bee within. The cells intended for rearing the Queens are larger than the others, and one is shown attached to a piece of brood comb in fig. 2. This, however, was taken from the hive of a smaller variety than those in fig. 3. I was unable to find any variation in the size of the bees, or of the brood cells, which would indicate the existence of three classes of bees, males, neuters, and females; and I feel convinced that the workers of the hive are males, and that probably the neuters or undeveloped females are wanting. Further investigations may, however, decide this question differently.

The honey receptacles present still greater differences as compared with those of our bee. Fig. 1, represents the interior of a log in which are a number of these honey cells of about the natural size. They are composed of a dark colored wax, somewhat less solid than that of our bees, and are sup-

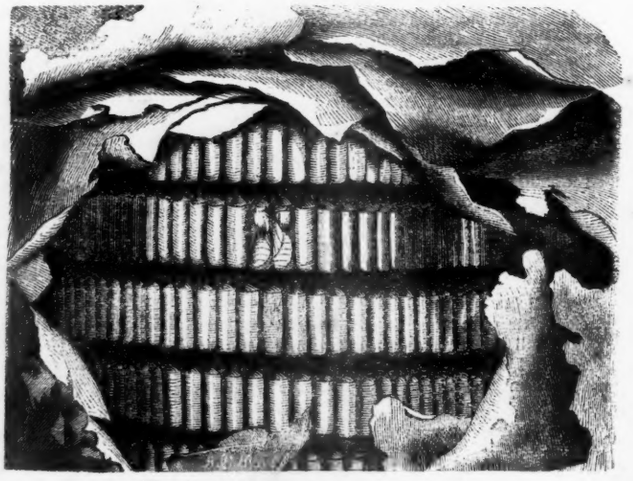


Fig. 3—BROOD CELLS OF THE JICOTE.

ported by footstalks, also of wax, though in some cases they are attached directly to each other, and to the log by their sides. They are hollow and have very thin walls, as will be seen in some of the upper cells which are broken, and they are filled with as pure and finely flavored honey as I have ever tasted. Only the new product of our bees called "virgin comb honey" can be compared to it. There is, however, a tendency in this honey to crystalize within a few weeks after removing it from the natural cell, so that in a bottle which has stood for a long time, one half the contents will be a hard mass of sugar. Whether this can be obviated by any process, I had no opportunity of learning. The wax, too, is inferior to ours for most purposes, as it is not so hard, nor is it capable of being bleached so white. It is used, however, for candles of an inferior quality. The people of Central America, being almost universally Catholics, use a large number of wax candles in the ceremonies, processions, etc., of that sect. The foreign or white wax is therefore in great demand for this purpose, and brings the very high price of one dollar per pound, so that in Guatemala, where I found the foreign bee successfully kept, the honey was of much less consequence than the wax, though from one hundred to one hundred and fifty pounds of honey is there not an unusual annual yield by a single swarm of European bees.

Fig. 9—CENTRAL AMERICAN APIARY.

One curious fact given me by the largest apiarian of foreign bees, is that the "large bees" of that country, although not so large as the foreign insects, nor armed with stings, yet destroy the latter, so that the two can not be kept near each other. In their native country too, I could hear of no trouble

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

to these bees from other insects, though stinging wasps and bees abound there. Some of these large egg-shaped cells are filled with a moist, granular, dark yellow substance that seemed to be mostly composed of the pollen of flowers which no doubt is the food for the young. All the crevices by which the domicil would be exposed, are filled by a cement composed mostly of sand, which becomes almost as hard as sand-stone. Sometimes this is found in very large quantities, considering the size and numbers of the insect.

Figs. 4 and 5, represent, in different positions, the queen of the *Jicote* variety, and fig. 6, one of the workers. Fig. 7, is the queen of a small yellow variety called "*Maria Seco*," and fig. 8, is the worker of the same. The queens, it will be seen, have the abdomen very much enlarged, and the wings are very small, and seem generally to be jagged and broken at their margins. It is with slow and awkward movement that she passes about the cells, and it is utterly impossible for her to fly, at least after she is in a condition to furnish the colony with eggs. From this, the inference is clear, that if they ever swarm as do our bees, the old queen remains in the original home, and the young queen goes to seek a new one, either before or soon after her impregnation, and before her form becomes so much enlarged. I could not learn however, that these bees ever "swarm." One man, who had only one colony which had hung in the same spot, yielding an annual supply of honey, for over thirty years, never had heard of such a process, nor had he ever increased his stock. When an increase in the number of colonies is desired, a box or hollow log is hung near to the old one, and a few pieces of brood comb containing young bees are placed in it. The bees soon discover the unprotected orphans and depute a portion of their population to nurse them. In the course of a few weeks the new hive may be removed to any distance, having probably in this time been supplied with a new queen from the old hive. How they multiply in their wild or native state, I could not form a certain opinion.

A Central American Apiary is a novel sight, and usually consists of from five to fifty logs hung up under the eaves of their thatched huts, as represented in fig. 9. These logs are generally brought from the woods, with the bees already in them, and receive no further attention from their owners than the taking away of the honey once or twice a year. This is done by removing the material, (wood or clay,) with which the ends of the log have been closed, and inserting the hand; the honey cells are crushed, and the honey runs out of the end of the log into a vessel, and after being strained of any impurities, is bottled for use. In other cases, the log is so divided that it can be opened more thoroughly, and these pretty honey cells removed unbroken and placed upon the table; but this is, a refinement not much practiced. The annual yield per hive or log is from 6 to 14 bottles of strained honey, each bottle containing about 2½ lbs., and is worth from 20 to 30 cents, at retail.

On my recent return to New-York, from that country, I brought with me two of these varieties, with a faint hope that they might withstand the climate of at least the southern portion of the United States. After a few weeks exhibition in the office of the *American Agriculturist*, they were placed in the hands of the Agricultural department of the U. S. Patent Office, and by them turned over to the care of Mr. Samuel B. Parsons, of Flushing, L. I., who immediately removed them from the original logs in which they were brought, placing them in what, to human eyes at least, seemed more comfortable quarters. The report, however, is, that on the first approach of cold weather, the bees were all found to be dead. That under different circumstances, or with a more extensive experiment, (I brought only two colonies,) any better result would be reached, I can not very strongly hope; but if any one has an opportunity and a wish to import these bees, I would advise that they be sent to Florida, or some of the most Southern States, and kept with as little disturbance as possible in their native logs. If they survive for a year, they can then be propagated by division, as above described, or if thought best removed to an observing hive. I found that they may be transported with almost perfect security by the ordinary methods of conveyance. Mine were first brought fifty miles on the back of an Indian, then placed on a springless ox-cart, then by steamer, exposed on deck to sun and rain, and by railroad over the Isthmus, and again by steamer to New-York, where they immediately recommenced work, flying out boldly over the roofs, and returning safely to their new location. This is certainly in favorable contrast with the numerous attempts that have been made to bring from Europe the Italian variety of our honey-bee.

Are Movable Frame Hives Best?

The Bees will, in a few weeks, be on the move for new quarters, and hives of the most commodious kinds should be in readiness for their reception. It is not proposed to inquire now whose patent contrivance is best suited for the bees and their keepers, but to notice simply the advantages claimed for movable frames, as these devices constitute the radical difference between a large class of recently invented hives, and the old fashioned plain box.

M. M. Baldridge, Niagara Co., N. Y., an experienced apiarian, states the case substantially thus: The movable frame hives may be made so as to cost but about twenty cents more each, than the common kind. Bees can be hived in them as readily as in the others; and, supposing they are to be taken up in the usual manner in the Fall, by destroying them with sulphur, the frames in no way interfere with the process. When this is done, it usually occurs that some of the combs last used for breeding purposes, (commonly the central ones,) contain but little honey, sometimes considerable bee-bread. In general, the amount of such comb will equal at least what two ordinary sized movable frames will contain. This comb, melted down for the wax it contains, is worth but a trifle. But when preserved in proper shape for use another year, as it may be by employing the frame, its value can not be less than twenty cents, the extra cost of adding the frames to the hive. Thus, then, the frame hives are at least worth as much as the others, and any further advantages must be in favor of the former. When the bees are destroyed, the frames containing the combs can be removed without breaking the mass, and making a general "muss," with more or less of waste, as occurs in removing combs from the ordinary hive. The above would be sufficient, in Mr. B.'s judgment, to determine the desirableness of the improved hive, for even those whose knowledge and care of bees is of the most limited extent, simply letting them alone after hiving, and destroying them in the Fall, for the honey. The more skillful apiarian, it is claimed, will find many more advantages not necessary to enumerate here.

To Destroy Potato Bugs.

In answer to a request in the last No. of the *American Agriculturist*, for practical information how to get rid of this insect, Mr. James M. Allen, Green Co., Ill., writes: Place a layer of dry straw beside the patch, or, if the plot be large, lay straw between every sixth and seventh rows. Pass over the field, and with a branch, or other suitable instrument, drive the bugs into the straw. Now take a large bundle of straw, set one end of it on fire, and pass the blaze rapidly along the row of straw: the bugs will be destroyed. Repeat the process as often as they become troublesome. [This may answer, *provided*, the bugs can be driven into the straw. The experiment is easily tried.—ED.]

For the American Agriculturist.

Starting an Apiary—How to Procure Bees.

In starting an apiary it is of the utmost importance to commence right. To do this the following rules should be carefully observed.

First—Select colonies if possible, in frame hives. I prefer Mr. Langstroth's.

Second—The best colonies to procure in Spring, are second swarms of the *preceding* year, provided the hives be full or nearly full of combs. They are the best, because if not queenless, each has a *young* queen. Queens generally lose their fertility after the third or fourth year; the younger the queen, the more prolific she is, hence the more profitable the colony will prove to the owner. Again, the combs are not as liable as older colonies to be filled with a superabundance of bee-bread. In frame hives, this excess of bee-bread may readily be taken away, so that by their use this objection is partially removed.

"First" swarms of the preceding year should generally be rejected by the inexperienced, whenever "second" swarms may be obtained, as the age of the queen can not always be ascertained—the first swarm from a hive being always accompanied—save one exception—by an *old* queen—usually at least one year old.

Old stocks should not be selected whenever either of the above classes can be procured, as the combs may be moldy, or filled with an excess of bee-bread. However, stocks not over two years old, being free from disease or foul brood, which have cast swarms the preceding year, and whose combs are bright, make very good stock hives. You may have to pay more for "second swarms" than for either of the other classes enumerated; they will, however, be found the cheapest in the end.

Third—Make a thorough examination of the selected colonies. After a little experience this need not require over 10 or 15 minutes. Take a piece of cotton cloth about ten inches square, and spread over it a thin layer of tobacco—smoking or chewing—then commence on one side of the cloth and roll it together, and sew or tie it in a roll. Punk, or partially decayed maple-wood will answer as well. Set one end of the punk, or roll, on fire—do not let it blaze. Blow a little smoke first into the entrance of the hive—the bees will retreat among the combs and fill their sacs with honey, when they are always peaceable. Remove the top cover, and blow a little more smoke into or through the slots, or holes, of the honey-board. The honey-board should now be removed and the frames of comb lifted out separately, and carefully inspected. The condition of a "good, *healthy*" colony should be as follows: 1st. At least eight frames of combs (there are *ten* frames in the Langstroth hive which I use) should be for rearing workers, which may be known by the size of the cells—the small cells being for the workers, the large cells for the drones or male bees. Unless the majority of the combs be suitable for rearing the workers, the colony is of but little value.—2nd. The combs should not be in the least *moldy;* on the contrary, they should present a bright appearance, especially such as have not been bred in.—3rd. The colony should be perfectly free from disease. This may be ascertained generally by removing the lids of sealed brood. If any brood be found in a putrid state, which emits an offensive scent, the colony is usually diseased. Better not select even apparently healthy colonies from apiaries in which "foul brood" has made its appearance.—4th. The hive should be well supplied with bees; also with brood combs in all stages of development, which, even though the queen be not seen during the operation—is a pretty sure indication of her presence. Thus examine all of the selected colonies, and if any be found that fail to meet the standard, reject them. A few good, *healthy* colonies to commence with, are far better than a large number of poor, or diseased ones.

If the colonies be in common "surplus box hives," the hives should be inverted for examination. The condition of the bottoms of the combs may thus be ascertained by driving the bees away from them by smoke, and if you are pretty good at *guessing*, you may possibly guess correctly respecting the condition of the combs further down. Do not select such hives simply because they have an abundance of honey. The less honey in box hives in the Spring, provided the bees have enough—say from 10 to 15 pounds—the better. The combs should be regular or straight, that they may be more suitable, should you wish to transfer them to frame hives; there should also be a majority of the "worker" class.

Mode of Transporting. — An elastic spring wagon is the best conveyance. The entrances of the movable frame hives may be closed to confine the bees, by tacking over each of them a narrow strip of wire cloth or gauze. The slots, or holes in the honey-board, should be uncovered, that the bees may have access to the honey chamber if necessary. The hives thus prepared may now be set into the wagon in their natural position. Box hives should be inverted while carrying them in the wagon. The bottoms may be covered by laying a sheet over each, which should be so secured that no bees can escape; provision for ventilation should be made. The vehicle should not be driven faster than a walk.

M. M. BALDRIDGE.

Niagara Co., N. Y.

How Iowa Boys Raised Corn.

Mr. Jas. Bruce, Desmoines Co., Iowa, writes that last season the following premiums were offered by Charles Dunham, Esq., Editor of the "Burlington Hawkeye," viz:

1st. For the greatest yield of corn raised on one acre by a boy not over 17 years old, a Medal worth $10.

2d. A fine engraving in gilt frame, or a $5 daguerreotype, to the boy obtaining the second largest crop from an acre.

3d. To all bona-fide competitors a copy of the Weekly "Hawkeye" gratis for one year. In each case all the work to be done by the boy.

Lawrence H. C. Bruce, aged 16 years, was awarded the first premium, having raised 117½ bushels; and David R. Bruce, aged 14, took one of the third premiums: he raised 110½ bushels.

The ground for the above was broken up 14 *inches deep*, May 10th and 11th; thoroughly harrowed, and furrowed 3½ feet, by 3 feet 9 inches; corn dropped by hand from 3 to 5 grains to the hill, and covered about 3 inches deep with a one-horse, double shovel plow with roller attached. In cultivating, L. H. C. Bruce plowed his plot five times: first and second times with a double-shovel plow, twice in a row; third time with a tri-shovel cultivator, fourth and fifth plowings with a double-shovel as at first; each time stirring the ground as deeply as possible.

David R. Bruce plowed, planted, and cultivated his in all respects as the other, only instead of using the double-shovel and cultivator, the single-shovel and a mole plow were used, finishing by ridging up to the corn.

In producing the crop no manure or fertilizer of any kind was used. The land is level prairie, bordering on timber; has been in cultivation six years with corn and wheat alternately.

Mr. B. says the boys learned the theory of deep cultivation from the *American Agriculturist.*

The Wheat and Chess Question.

It may be well to repeat, for the benefit of 30,000 to 40,000 new readers, that we last year offered a reward of $500 to any person who would demonstrate by a series of well conducted experiments, that wheat will turn to chess. This offer has called out a great number of letters on the subject, some giving notice that the writers will be prepared in due time to claim the premium; with many others detailing experience in the past. We can not, of course, publish these letters without giving up the whole paper to the subject. Here are a couple of examples similar to many others: John Plotter, of Green Bay, Wis., writes that last year he cleared a forest and sowed it to oats, June 14. The oats grew finely, but were struck with rust before ripening. A subsequent rain washed off the rust, and he had a good yield of fodder. Sept. 6th he sowed wheat, which was somewhat damaged by frost, but it recovered finely, owing to the splendid Spring weather. The crop grew so vigorously that it was a pleasure to look at the field. But to his surprise, at harvest, most of the expected wheat proved to be chess, especially along the border of the forest; on the higher ground away from the forest, the wheat was beautiful, yielding from 35 to 40 bushels per acre. Mr. P. is sure that his wheat seed was good and clean; and no weeds came up on the field.

Another subscriber writes from Louisville, Kentucky, that in 1858 he had a few acres of very fine wheat, that, when nearly ripe, was almost destroyed by a storm, so that it could not be harvested clean. In the fall there was a growth of wheat on the ground as thick as if four bushels of seed had been sown. The land being in good order, he let the volunteer crop grow, and expected a second good harvest. But when nearly ripe, he discovered that *it was all chess!* He thinks he could have threshed 10 bushels per acre of chess, and there was not a single head of wheat on the field!—Again, year before last, the swine broke into one of his wheat fields and spoiled a part of it, so that it was not harvested. Last year a crop of chess appeared, and the plot of chess just covered the ground where the swine spoiled the wheat, and extended no further.

The above are staggering cases, and not having witnessed the fields or studied their previous culture and surroundings, we shall not attempt to explain the phenomena. But there must have been some cause for the appearance of the chess other than the transmutation of the wheat. If wheat can turn into or produce chess under any circumstances, then all scientific observations on the "*permanence of species*" must be sadly at fault. We are still positive that without miraculous interposition, without an absolute variation from fixed natural laws, it is not possible for a grain of wheat to produce a head of chess. We will only repeat, that we will very cheerfully pay the $500 offered, if any one will ascertain by a succession of experiments, any process or combination of circumstances, by which such transmutation can be brought about. Of course if it can be done once, the experiment can be repeated. Let those who believe the transmu-

tation possible, experiment and learn *how* the change can be produced. It will then be easy to repeat the experiment under circumstances which will leave no doubt. If any one succeeds in conclusively proving to the world that wheat will turn into chess, he will not only receive the reward offered, for his labor, but his name will become famous. He will upset one of the laws assigned to nature, and held to be immutable, by all scientific naturalists.

For the American Agriculturist.

Tim Bunker on Seed.

"Where you get de seed of dem big beets you raise last year, Massa Bunker?" said Jim Baker to me this morning. "Never seed sich beets down South in all my life. Reckon dey come from Africa, or somewhere dey git up airly in de morning."

"No, Jim, I got them from New-York, where they lie abed badly in the morning, I am sorry to say. Half of them don't get their breakfast till nine o'clock."

"Can't be, Massa. Must have come from some place close by sunrise, or dey never growed so big. I watch 'em last Summer, and I declare fur sartin, I tho't dey never would stop growin."

Jim Baker, though he has been with us but two or three years, is one of the institutions of Hookertown, as much so as Mr. Spooner, or the school master. He was liberated by his master, a few years ago, with all the rest of the negroes upon the estate, and sent out to Liberia. He had made himself useful upon the plantation as cooper, in preparing sugar and molasses casks. He went out to Liberia, with rather elevated notions of that land of promise, and of the freedom he was there to enjoy. Feeling rather above digging for a living, and not finding much demand for a cooper's labors in that new country, he became homesick, and took the first vessel bound for the States. Some of his shipmates hailed from this place, and Jim brought up here, and considers himself settled for life. He takes naturally to gardening, and often excites the envy of Jake Frink, by beating him on garden *sauce*, and a rude kind of joking, which Jake calls "*sassy*." Jim takes note of all the best gardens, as he goes round doing odd jobs among the villagers, and is an appreciative beggar of good seeds. He turns up the white of his eyes at an extra sized patch of onions, and if he can not get a dozen of the bulbs to set out, he wants just a pinch of the seed to plant. With his hat under his arm, and that deferential air which marks the well bred servant, he is pretty sure to get what he wants. "Nebber could see Massa Bunker, what's the use planting poor seed. Sartin to git jest what you plant."

Jim's philosophy, and Jake Frink's, do not belong to the same school. Jake thinks a seed is a seed, just as a cow is a cow, whether she is a skeleton, or have five hundred weight of beef laid in between her skin and bones. Jake has no idea but what old seeds are just as good as any, and so he keeps his old stock on hand from year to year. He has an old basket in his pantry for this purpose, and there you will find seeds of the cucumber, squash, pepper, corn, beans, onion, cabbage, turnip, nasturtium, and a little of every thing else that ever grew in his garden. They have no labels, and there is no means of ascertaining the age of any package in the basket. Some he has begged, a few he has bought, but the most he has raised upon his own premises in that slipshod way that marks every thing about the establishment, and which has long since passed into a proverb. If you were to say a thing looked *frinky*, every man in Hookertown would know just what you meant.

The last three or four cabbage stumps, or turnips, he happens to have left in the Spring, are set out without any regard to quality or variety. So his cabbage is neither early York, nor Drumhead, Red Dutch, nor Savoy, but a mongrel stock, showing streaks of every thing he has raised. His turnips and other tap-roots follow the same law, for they have all been cultivated upon the same system. Jake has no idea of the mixing of varieties in the blossom, or of their running down by bad cultivation.

With Jim Baker, a seed is not a seed. "Tell you what Massa Bunker, every ting 'pends on what you plant. Iniquities of de faders visited on de children, and no mistake." Jim lives up to his philosophy, as a good many people who talk more, do not. The best beets are selected, and planted in good rich soil, and the seeds are carefully labeled and put away where they can be found in planting time. Dinah cleans out the old basket every Fall, and nothing but the seeds of the squashes, and other vines, are allowed to remain over a second year.

I raise but few seeds myself, because I have found it better economy to buy such as I want at the large agricultural warehouses in the city. As a rule, the men who devote their time to raising seeds, will get a better article than those who have other business constantly upon their hands. Their success in business depends upon their fidelity, and they are generally careful to give the public a good article. Well established firms in the city have extensive arrangements with seed growers in all parts of this country and of Europe, to furnish the best articles in their respective lines of business. If I want twenty varieties of garden seeds, it is much less trouble to send an order for them by express, than it is to try to raise them, and take care of them.

This month I always lay in my stock of seeds, the best varieties, and enough of them. I know just how much ground I am going to plant in each crop, and can tell within a few ounces of the quantity I shall need of each variety. If it is put off till planting time, when every thing is in a hurry, the best time for planting often goes by before you are ready, and you get only a partial crop. The best investments I have ever made in a small way, have been in this article. Take particular notice. Never buy cheap seed.

Yours to command,

TIMOTHY BUNKER, ESQ.

Hookertown, Feb., 1861.

Hints on Starting Garden Plants Early in Spring.

Various methods may be resorted to for procuring early vegetables and flowers, in all climates, and especially in the colder regions of the most Northern States, and of the British Provinces, as well as for securing the growth of those plants which will not ordinarily mature where the season is very short. Green-houses, hot-beds, and cold frames, are the most desirable, and these are destined to come into more extensive use, when people generally learn how simple, cheap, and valuable they are. Of these we speak from time to time; here we will only refer to one or two methods that may be adopted by all.

First, let it be remembered, that a soil deeply dug and thoroughly drained, is in a condition to receive seeds or plants much earlier than an ordinary soil, no matter how dry it may be. A free admixture of fermenting manure, like that from the horse stable, also tends to warm the soil.

The smaller seeds, lettuce, cabbage, cauliflower, turnips, tomatoes, many of the flower seeds, etc., may well be sown in cheap earthen pots, or in boxes of earth. These boxes, if watertight, should have gimlet holes in the bottom to drain off excess of water; an over dose of water with no drainage, will often stop or greatly retard the growth. Though not indispensable, it is always preferable to water at the bottom, letting only so much soak in as will naturally rise by capillary attraction. While the weather remains cold during the day, these boxes or pots may be kept in a warm light cellar, or better still, in a room slightly warmed by fire heat. But as soon as the out-door temperature during the day is above the freezing point, they should be left out in the sun, and only be brought in at night when there is a prospect of frost. It answers very well to leave them on the South side of a barn during the day, and remove them to the barn floor at night, covering with straw if needed to keep out frost. By a very little care of this kind any one may have an abundant supply of plants, ready to be transferred to the open ground when danger of frost is past.

Another method which has been highly commended by some, is this: Cut turf or grass sods into square blocks, or in long pieces; if grass sods, pare off a little of the grass side. Invert the pieces and plant in them various seeds, such as cabbage, lettuce, cucumbers, melons, corn, turnips, radishes, indeed any thing which is desired to grow early. These can be laid closely together on the south side of the house, or barn, taking care to apply, from time to time, just water enough to keep them barely moist. On cold nights they can be covered with old carpeting, or blankets, and straw, until the plants begin to appear, after which the pieces should be temporarily removed to the cellar whenever there is danger of frost. As soon as the condition of the soil and weather renders it safe, the sods or turf may be cut into small pieces, each one containing one or more growing plants, and then set them into the open ground. There is a double advantage in this process: a gain of one to three weeks in time is secured, and the sod or turf is an excellent material for promoting future growth and fertility. Any one who will try this method for a single season, will not be likely to omit it afterwards. Three or four hours of time expended in this way, will secure a considerable supply of extra early products of various kinds.

Those who have a few old baskets will find the following plan a good one: Put into the baskets a quantity of good soil, with rotten chips, with or without some well rotted manure, as may be needed by the soil used. Plant in each basket a few melon, cucumber, squash, or pumpkin seeds. The baskets can be carried in or out according to the state of the weather. After the plants are in vigorous growth, and the weather suitable, set the baskets in the soil, one in a hill, without disturbing the contents. If the sides and bottoms of the baskets be not pretty open, a number of holes should be punched through. The roots will find their way out into the surrounding soil. By starting early, so as to have large vigorous plants growing in the baskets of earth by the time the weather is settled, you may have cucumbers ready for the table almost as soon as other people have plants coming up, and melons and other products proportionately early.

What is the Value of Carrots?

To the Editor of the American Agriculturist.

This question "being still before the meeting," I respectfully submit my views. I have raised this root for feeding purposes for eight years, and have never sold my surplus crop for less than twenty five cents a bushel. I consider it the best of all roots for horses, and next to the sugar beet as a feed for milch cows. I feed daily from four quarts to a peck, with two quarts of Indian meal, or of oats, with as much cut hay as the horse can eat. More or less roots are given according to the amount of work done. The horse keeps in better condition on this feed, than when fed exclusively with hay and oats. They give a gloss to the skin which I have never noticed with any other feed that I have tried.

I also used them for milch cows until I raised the sugar beet, which I find to yield more largely than the carrot, and to increase the flow of milk. Carrots improve the quality of milk, but do not add so much to its quantity as some other roots. They are excellent for store pigs, and for young cattle, and answer so well for all kinds of stock, that I am extending the cultivation of them every year. They are also growing in favor with my neighbors, and I find no difficulty in disposing of all my surplus crop to livery stable keepers, and gentlemen who keep horses. I have grown them at the rate of twelve hundred bushels to the acre, and at a cost of ten cents a bushel. A neighbor raised four hundred bushels in his garden, the past season, at the rate of over 2000 bushels to the acre.

In the onion growing districts of Rhode Island and Connecticut, it is quite common to raise them as a succession crop, with onions, sowing the carrots between the onions in June. With heavy manuring, this gives very large returns. The carrots are loaded in sloops, and sold in the seaport towns along the Sound, at about eighteen cents a bushel at wholesale.

The value of the root is pretty well established in the minds of men who have tried it for feeding. John Merrill, of South Lee, Mass., raises them at the rate of 600 bushels to the acre, and at a cost of four cents a bushel, exclusive of the manure. He considers 100 bushels of oats and 100 bushels of carrots, worth as much as 200 bushels of oats to feed to team horses.

J. C. Curwen, of England, after two years' experiment with eighty horses used on the farm and in coal mines, came to the conclusion that carrots were worth as much, pound for pound, as oats, and that an acre in carrots, supplies as much food for working horses as 16 acres of oats.

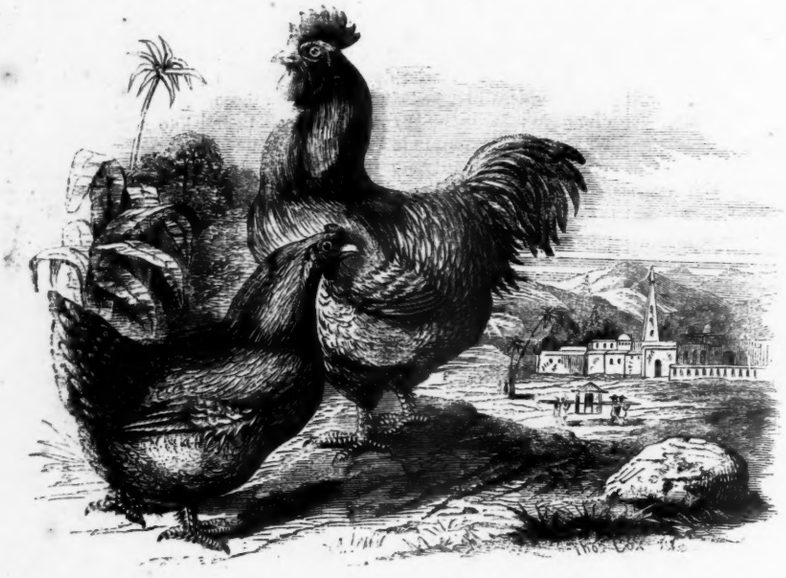
According to Josiah Quincy's experience, at Quincy, Mass., charging labor at one dollar a day, it costs eleven cents a bushel to raise carrots. Some other experimenters put them at nine cents a bushel. This is upon the supposition that the hoe is used in weeding. With horse cultivation, this expense might be reduced more than half. With the requisite skill, carrots can be grown and put in the root bin, ready for use, at seven cents a bushel. The white Belgian last year yielded at least 20 per cent. more than the Altringham. I consider carrots well worth $12 a tun for horse feed, and should be willing to give that if I could not get them cheaper. At the same time, I should think them well sold at $10 a tun. They would pay much better than grain crops at that price.

CONNECTICUT.

For the American Agriculturist.

Shanghai Creepers—Experiments in Fowl Breeding.

Among the Asiatic fowls, the Shanghais have occupied a prominent position; it was the Shanghais which created such a furor in hendom a few years ago, and it was the Shanghais on which the bubble burst. They have never been favorites with us; we have always considered them the most unsightly birds ever introduced into the poultry yard. There is, to be



sure, considerable difference in the fowls called Shanghais; some are loose-jointed, long-legged, with crane-like necks, and are a disgrace to the tribe. For the table, they were considered inferior to most other breeds, in consequence of the absence of breast-meat, and to their comparative superabundance of bone.

That the Shanghai fowl can be improved in the two essential points—legs and breast—is evident, as may be seen by an inspection of the portraits illustrating this article. The originals, now in our yard, were bred by Judge Taggart, of Pennsylvania. In form, color, and general characteristics, they are Shanghais, with fuller breasts and on short legs. Let the author, Judge Taggart, tell in his own words, how this improvement has been accomplished by him.

"The experiment of grafting Shanghais on Creeper legs is a very interesting one, and has been eminently successful. The following is the *modus operandi:* I began in 1853 by crossing a Shanghai cock on a common Creeper hen, called in some of the English books, Scotch Bakie or Dumpy. I had observed, when a boy, that in mixing this variety with long-legged birds, the offspring would be either *full long* or *full short* in the legs—seldom or never half and half. In my recent experiments, I have found no reason to change my views. Of course, the progeny of the first year were half Shanghais, and about half the number were hatched with short legs—as short as their maternal ancestors. Pullets of this description were bred the next season, (1854,) to a thorough-bred Shanghai cock, with exactly the same result, and so continued until the present Spring. It is very remarkable, that although the chickens of this season *lack only* $\frac{1}{120}$*th part of being full blooded Shanghais*, they show as many short-legged birds as did the first cross, viz: one half. You will perceive by following up the years, that my calculation is correct: 1853, $\frac{1}{2}$—1854, $\frac{3}{4}$—1855, $\frac{7}{8}$—1856, $\frac{15}{16}$—1857, $\frac{31}{32}$—1858, $\frac{63}{64}$—1859, $\frac{127}{128}$.

"I have three Creeper pullets from last year, ($\frac{63}{64}$), which weighed a month ago 9 lbs. 2 oz.—8 lbs. 4 oz.—7 lbs. 12 oz. The first is the heaviest *pullet* of any kind I ever saw, and will doubtless weigh 11 or 12 lbs. in a year or two. Pullets of 8 lbs. and less, have obtained this weight for me the third year, in February or March. Generally, however, the Creepers are not so heavy as their taller brothers and sisters, though exactly of the same blood. Another thing is to be observed. When Creeper is bred on Creeper, they will produce quite a number of long-legged chickens. I have not tried them much in this way. In all their characteristics, but the legs, the fowls of this mixed breed are identical with their Asiatic progenitors, except that they are more easily confined; any place that will hold a pig, will hold them. A fence thirty inches high will hamper them, if in condition. Roaming, however, is not in their line."

The writer tried a similar experiment last season, with this difference, a Scotch Dumpy (Creeper,) cock and a Cochin hen were used; the result was, that out of a clutch of thirteen chicks, there were three full long-legged, and nine about medium between the two—being neither long nor short. C. N. BEMENT.

A Poultry Lecture in Few Words.

Mr. Deforrest Wright, Warren Co., Pa., writes to the *American Agriculturist* thus: Poultry will pay for warm quarters and suitable feed; the following account with hens for 1860 proves it:

Dr.		
To 16 hens (mixed breed) at 25 cents		$4 00
" feed from mill		14 63
" 1 bushel corn meal		75
Total cost		$19 38
Cr.		
By 61 Fowls, killed and on hand, at 25 cents		$15 25
" 1933 eggs at 1 cent		19 33
Total return		$34 58
Deduct cost		19 38
Profit		$15 20

[The above is a model communication, plain, practical, and right to the point. The question is stated and proved in about a dozen lines. Let us have equally conclusive arguments on other subjects; they are worth whole pages of theoretical essays.—ED.]

The New Chinese or Ailantus Silkworm.

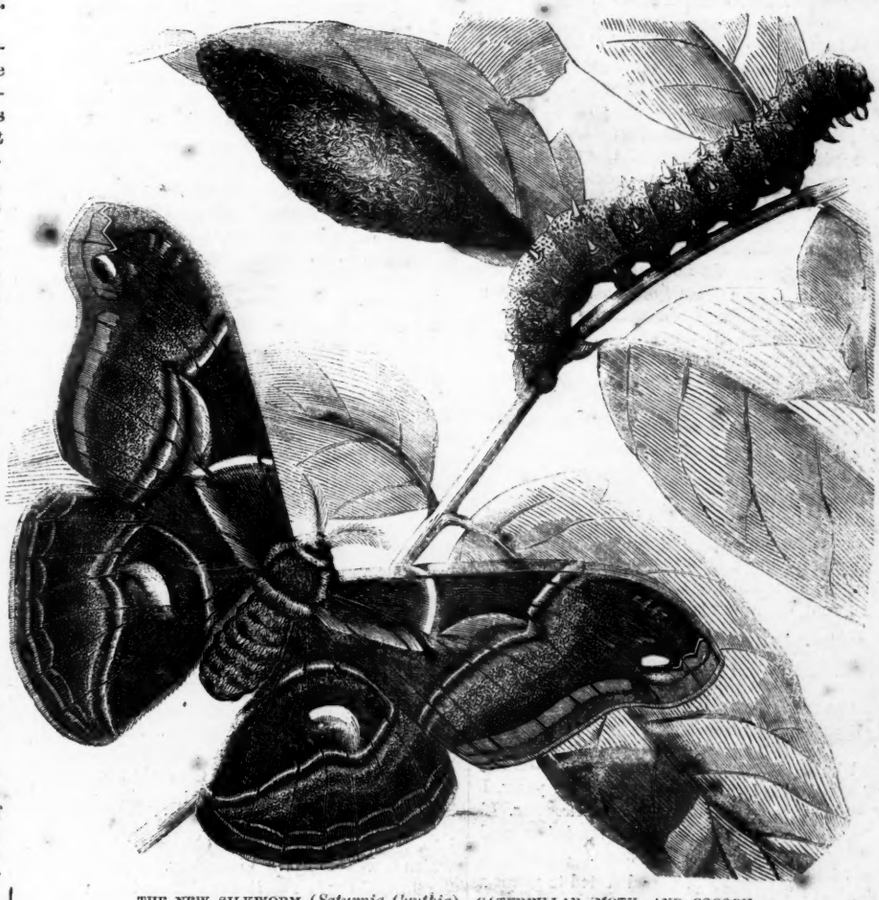
In last month's *Agriculturist*, page 40, we referred briefly to the fact that a considerable degree of interest is awakened in regard to a new silkworm, which feeds upon the common Ailantus tree (*Ailantus Glandulosa*). It is claimed that it produces a silk which, though not equal in luster to that of the mulberry silkworm, is yet strong, takes most dyes well, and must be cheap, as the tree on which it feeds grows rapidly in almost every climate, and the worms are easily cared for. Indeed it is hoped by some enthusiastic French gentlemen that the new silk will soon take the place not only of the common silk, but also of Cotton in a great measure. This is a matter of much doubt, yet the most sanguine expectations *may* yet be realized. We have thought the subject of sufficient interest to present our readers with the accompanying engravings, and give a brief account of the matter. [We have also sent to our French correspondent to procure for us some eggs, for experiment here. If obtained, the results will be published.]

The Ailantus tree is too well known to need description. It grows rapidly, and endures our hardy winters. Those who dislike the Ailantus so much as to become nervous at the bare idea of having our country stocked with the trees, will be quieted with the statement that, while the bombyx, or new silkworm, will feed upon the leaves of the full grown tree, it flourishes best on the leaves of young shoots. The plan recommended is to set out the young trees closely in rows, like a nursery, and cut them down to the ground every Spring. The abundant suckers sent up will furnish a full supply of large tender leaves for the worms. There need therefore, be no tall blossoming trees with their disagreeable odor, but simply a thick copse of young shoots, annually renewed. The Ailantus grows freely on the poorest stony soils; and should the new silkworm prove to be valuable, the hill sides of our northern States may yet rival the mulberry plantations of Italy, and the Cotton fields of the Southern States.

The engraving represents the full grown moth or butterfly, which is superior in size and appearance to the mulberry silkworm moth. The caterpillar or worm is also larger than the common silkworm. It is of a nearly green color, marked with black spots; its spiny tubercles are bluish green; the feet, head, and the last segment or ring of the body are light yellow. It must therefore be a beautiful caterpillar, far excelling in this respect the mulberry silkworm, which, though laboring to deck others in showy silks, is itself very homely clad. The cocoons, one of which is shown on the leaf, in reduced size, are oval, and of the exact color of a dead leaf.

The eggs of the Ailantus silkworm hatch at a temperature of 64° to 68°(Fahrenheit) or 18° to 20° centigrade. They must therefore be kept in a cool place until the Ailantus plants are in leaf. When hatched, the young worms may be placed on fresh leaves in a tray, or better still, on young branches furnished with leaves, the lower ends of the branches being stuck into jars of water. After the first moulting they may be transferred to the growing trees, and left there *in the open air* until the cocoons are ready to be gathered. Those familiar with the details of producing the mulberry silk—the required house for protection, the careful nursing of both the plants and worms, the trouble of gathering fresh leaves daily, etc.—will readily appreciate the advantages of this new insect.

In conclusion, we advise that no one be in haste to invest his all in the new enterprise. Remember the Morus Multicaulis! The accounts that have reached us, thus far, are all rose colored, and we confess to a *hope* that much will come of the new enterprise. The experiments of the present year will throw further light on the subject, and we shall be ready to chronicle its success or failure, as the case may be. It may be well for a few who have the adequate leisure, and facility, to experiment in a small way the present year if they can get the eggs. It will be several weeks before we can receive ours from Paris, if they are to be obtained at all this year. We fear that all that will be available, have already been secured by interested persons in various parts of Europe.



THE NEW SILKWORM (*Saturnia Cynthia*)—CATERPILLAR, MOTH, AND COCOON.
(*Engraved for the American Agriculturist.*)

How the Chinese Make Dwarf Trees.

We have all known, from childhood, how the Chinese cramp their women's feet, and so manage to make them "keepers at home," but how they contrive to grow miniature pines and oaks in flower pots for half a century, has always been much of a secret. With the breaking down of their famous wall, and of their exclusiveness, this, among other curious nonsense, has been partly discovered and understood. It is the product chiefly of skillful, long continued root pruning. They aim, first and last, at the seat of vigorous growth, endeavoring to weaken it as far as may consist with the preservation of life.

They begin at the beginning. Taking a young plant, (say a seedling or cutting of a cedar,) when only two or three inches high, they cut off its tap-root, as soon as it has other rootlets enough to live upon, and replant it in a shallow earthen pot or pan. The end of the tap-root is generally made to rest on the bottom of the pan, or on a flat stone within it. Alluvial clay is then put into the pot, much of it in bits the size of beans, and just enough in kind and quantity to furnish a scanty nourishment to the plant. Water enough is given to keep it in growth, but not enough to excite a vigorous habit. So, likewise, in the application of light and heat. As the Chinese pride themselves, also, on the *shape* of their miniature trees, they use strings, wires, and pegs, and various other mechanical contrivances to promote symmetry of habit, or to fashion their pets into odd, fancy figures.

Thus, by the use of very shallow pots, the growth of tap-roots is out of the question; by the use of poor soil and little of it, and little water, strong growth is prevented. Then, too, the top and side roots being within easy reach of the gardener, are shortened by his pruning-knife, or seared with his hot iron. So, the little tree, finding itself headed off on every side, gives up the idea of strong growth, asking only for life, and just growth enough to live and look well. Accordingly, each new set of leaves becomes more and more stunted, the buds and rootlets are diminished in proportion, and at length a balance is established between every part of the tree, making it a dwarf in all respects. In some kinds of trees, this end is reached in three or four years, in others ten or fifteen years are necessary. Such is fancy horticulture among the "celestials!"

Talk about Pruning.

As the season of the year is just at hand when many who yet adhere to the old, though not commendable, practice of Spring pruning, will be sharpening their tools for the annual "trimming," we beg leave to mention a few leading principles lying at the base of this operation.

In the outset, it may be safely said that there is altogether too much pruning done; or at least, that it is performed with too rough and careless a hand. It is scarcely more a light matter to a tree to have one of its large branches lopped off, than for a man to have an arm amputated. The body of an animal has no redundancy, no surplus parts which may be removed, and the main structure continue just as vigorous as before. May we not infer, therefore, from analogy, that every part of the vegetable is needed to preserve its health, and to enable it to fulfill the designs of nature?

All observing gardeners know that the several parts of a tree or plant are closely connected, and that one portion can not be injured without at the same time injuring others. Cut off or mar a branch, and at once a portion of the root feels the blow and suffers from it. So, if you cut off a root, the injury is felt among the branches. Nor is this surprising, if, as some say, the branch is only an extension of the root, every bud above ground having a corresponding bud or rootlet below. But whether this exact balance of parts exists or not, there is, without question, a nice sympathy and correspondence of growth and health between them. If I prune the top of a tree closely for several successive years, I do in fact prune the roots also, and *vice versa*. If a tree has an abundance of leaves, it has, and must have, an abundance of roots.

Hence we see why we are directed to prune a hedge in mid-summer, if we wish to restrain its growth and keep it stationary. Pruned in Spring, there is no loss of foliage, but a rapid determination of sap into the remaining buds, (to restore the balance between root and branch,) and hence a vigorous growth. Hence, too, we see why it is better to transplant small trees than larger ones. The first can be taken up with little mutilation of root and branch, and when again set out, they go on their way almost as if they had not been disturbed. The latter can not be unearthed without cutting off and mangling many of their roots, and so introducing derangement and disease into the whole structure. Something can be done, it is true, toward restoring the equilibrium of the parts, by cutting off a large portion of the branches at the time of transplanting; but this gives the tree another severe shock; it deprives it of a large part of its elaborating organs, and so, between the double abuse, it is a long time before it recovers—if it ever does—from the severe injuries.

The effect of injudicious pruning may be seen in almost every orchard. How many a large limb is hewn off, and the stump, not being properly protected from the elements, decays and brings disease into the entire tree! The natural life of the apple-tree, when growing in the field undisturbed, is about a century of years; yet in many of our orchards, it seldom reaches beyond half that period. So much for civilization!

Must we, therefore, not prune at all? By no means. It is the heroic style we inveigh against, and would have dispensed with as soon as possible. Moderate and timely pruning has much to recommend it. The beauty of a tree and its fruitfulness may be promoted by it, and that with little injury to the tree's health. Plainly, however, to accomplish this, the work must be begun very early, and take the character of training rather than of pruning; *the excisions being done mostly with thumb and finger*, or with no more formidable instrument than a jack-knife. Let the saw be broken, and the hatchet buried.

In pruning for beauty, all that is needful, is to begin with the young tree, nip out any cross-branches that appear, pinch off any one-sided, ill-shaped shoots, and endeavor to keep the tree symmetrical. Within such general limits, let the tree develop its own peculiarities, and it will be beautiful according to its kind. Whenever a branch larger than one's little finger must be taken off, the wound should be covered with grafting wax or shellac.

In pruning for fruitfulness, the aim is to impede the perpendicular flow of sap, and the tendency to make more wood. This is often effected by cutting out the central shoot, and by favoring, in various ways, a horizontal growth of branches. This checks the wood making force, and promotes a deposition of fruit buds. This also gives the tree a more globular shaped head, and so exposes the fruit to light and air, and improves its appearance and flavor.

As to the best time of year for pruning, this may depend somewhat upon the object we wish to accomplish. If we want to guide the growth of the tree into new directions, or to stimulate a stunted tree, the last of Winter, or very early in Spring may answer, though the best authorities prefer the Fall or late Summer. But, to diminish rapid growth, to promote fruit-bearing, and for most other purposes, the early Summer is the best time. After pruning in Spring, there is apt to be a troublesome growth of suckers, just below the wound, increasing the evil which it was designed to remedy. Then, too, the flow of crude sap in the Spring is so very strong, it is difficult to stop it; it oozes out from the wounds, and runs down, corroding the surrounding bark and wood, often engendering decay. But when pruning is done in the month of June, the wounds are protected by the foliage, the first strong upward flow of sap is over, and the descending sap is elaborated into cambium or new wood, which begins at once to heal over the wounds, and to preserve them from decay.

Eight Reasons for Planting an Orchard.

1. Dr. Dwight used to remark to his pupils at Yale, that the raising of fruit was the cheapest and pleasantest way of entertaining one's friends. We are creatures of society, and it is a very important object to make the social board attractive to all who honor us with their friendship. A dish of well grown apples is always wholesome and acceptable.

2. An orchard is an ornament to the farm, beautiful in its spring blossoms, its summer drapery of green, and its autumn burden of yellow and ruddy fruit. No farm is complete without its acres of orchard.

3. The cultivation of fruit is a very pleasant occupation, and has an important influence upon the mind and heart of the cultivator. It requires higher intelligence than the growing of the annual crops. It fosters forecast and hopefulness, and tends to a cheerful temper.

4. It makes home attractive—children are universally fond of fruit, and the home where this luxury is always enjoyed, will be more loved on that account. It will be in pleasant contrast with many homes around them.

5. It will tend to guard children against vice and crime. So strong is the desire for fruit, that they may steal it if it be not provided for them at home. And the boy that grows up plundering his neighbor's fruit yard and orchard, is very likely to steal more valuable things when he becomes a man.

6. It is a very sure investment. An apple tree, if well planted, is about as hardy as an oak, and sure to bear fruit according to the labor bestowed upon it. When houses burn up, and banks fail, and railroad stocks depreciate, the orchard will yield dividends.

7. It is not only a sure investment for yourself, but for your children. No real estate in their inheritance is likely to be so permanently valuable. An orchard in good soil will bear fruit for a hundred years.

8. It is a perpetual incitement to thanksgiving to the bountiful Creator. It yields its burden of precious fruit year after year, giving large returns for the labors of the husbandman, and calling him to behold the wisdom and goodness of Providence. Do not fail to plant that long deferred orchard, and while you are about it, select good marketable fruit. The best is the cheapest.

Decay of Fruit Trees.

To the Editor of the American Agriculturist.

Many of my apple trees are dead, and others are dying. I do not know the cause or remedy. Some 8 or 10 years since they were pruned in the Winter, and some persons say that is the cause of the present decay. I observed that they died faster after this pruning than before. The wounds did not heal over, but the stumps from which the limbs were cut, decayed, leaving holes in them. I have some trees left, but at this rate of decay they will soon be gone. My peach trees have also declined, but that is owing to age, some of them being 20 to 30 years old. I think of putting out from 20,000 to 25,000 more, next Spring. Pear and cherry trees also, seem to be declining. Figs, I can manage—know all about this delightful fruit, and have it in abundance; but any suggestions you can make relative to the others, will be gratefully received by me and my neighbors. ENOCH REED.

Accomac Co., Va.

REMARKS.—Injudicious pruning doubtless had much to do with the decay alluded to. Besides cutting off the branches at a wrong season, a *stump* was left to decay, until a hole was made almost or quite to the heart wood. Cut all limbs closely, so that the first new growth shall begin to roll over the wound and cover it in a few years. See chapter upon pruning in the present number. We would also advise our correspondent to examine the trunks of his trees, near the ground, to see if borers are at work. Saw-dust castings at the foot of the tree, discolored and sunken bark, or a hollow sound when tapped with the knife handle, reveal their presence. Cut them out, or bore them to death, more to destroy a future progeny than to prevent present harm, as they will leave of themselves next May or June, to return however, very soon, in the form of butterflies to lay numerous eggs for another race. Newspapers tied closely around the trunks in May, to prevent a deposit of eggs, or an occasional application of strong soapsuds or lye, will keep the trees nearly free from these pests. It may be that your soil is at fault. Of that we can not judge. If covered with grass dig it up. Try a coat of ashes on the ground around the trees, digging it in as deep as can be done without injuring the roots.—ED.]

The Apple Borer on Slate Lands.

A correspondent, at Hollidaysburg, Pa., says that a young orchard set out on slate land, near the base of the Alleghanies, was nearly destroyed by the borer, while another of his own planting on gravely land escaped. He wishes to know if the slate land is particularly favorable to the depredations of the borer.

If he will come this way, we can show him young orchards on gravely soils, and indeed, on almost every variety of soil, quite as badly injured by the borer. This insect is an excellent judge of timber, and prefers the soft, juicy bark of thrifty trees, to those that are hide-bound. The slate soil is probably of better quality than his own orchard ground, and so is more likely to be infested with this insect. The owner also, is probably more careless of his apple trees, leaving them to their fate. We should never hesitate for fear of the borer to plant an orchard on any ground where the trees would grow. An examination about the collar of each tree, twice a year, say in June and October, will keep the borers so under that they will do but little damage. Their attacks are principally confined to young trees, and cease after a few years. The examination should be made with a sharp pointed knife and wire, killing the insects as you go.

Have You the New-Rochelle Blackberry?

If not, in March or April, according to locality, add it to the fruit garden, though last Fall would have been better. Were it necessary to dispense with either this or the best sort of raspberry, the latter would be rejected from the writer's premises, and the former chosen; even the strawberry ranks not many degrees higher in our regard, when all things are taken into account. A dozen hardy plants well trained, will supply an ordinary family with an abundance of luscious fruit for weeks. They are grown as easily as weeds; they ask only to get a good foothold, and they will maintain it most tenaciously. Of course, proper care will bring finer fruit and more of it, than merely suffering the root to occupy a place in the ground.

It is somewhat difficult to raise this plant from seed, except they be sown when first gathered; and there is no certainty of obtaining the same variety sown, although the young plants will be likely to be nearly true to kind. But the roots are now readily obtained at almost all nurseries, and at a comparatively moderate price.

Having obtained a supply of roots from a reliable source, choose a convenient location, prepare the ground, if not rich, by spading or forking the whole plot deeply and working in a liberal supply of manure, or what is better, a compost made of two parts leaf mold or chip dirt, one part rotted turf, and one part stable manure. Trenching the ground would pay in most gardens, particularly if the subsoil be clayey and hard. Mix the manure well with the whole soil, so that the plants need not be alternately feasted and starved. Post-hole cultivation, or merely digging a hole a foot square, enriching it, and crowding in the roots, may answer for raising sticks, but not for securing fruitfulness.

The plants should be placed at least six feet apart each way, as the canes grow rampantly and need plenty of room. Cut back the canes to within six inches of the root before planting.

It is best to prepare for properly training the vines at the time of setting out. Unless planted near a fence to which they can be fastened, set small posts firmly in the ground, about 20 feet apart in the row of plants, and in the direction nearest North and South. They should stand about 6½ feet high above the ground. Stretch wires (No. 9, or 10) along these, fastening them firmly by staples, or by winding around the posts. Let the first be about two feet from the bottom; the others eighteen inches apart, the upper one at the top of the posts.

During the Summer keep the ground loose about the plants, and free from weeds. Mulching with leaves or cut straw during hot dry weather, will promote the growth. As the canes branch out, secure the main shoots to the wire trellis with lead wire, or soft strings, spreading them out in a fan shape. If proper attention be given, next year there will be a crop of fruit sufficient to pay for all the pains taken. These directions apply equally well on small plots for family use, or extensive plantings for market. There is yet room for many to reap a rich harvest from this fruit near any of our large cities.

For the American Agriculturist.

Raspberry Cultivation.

The common red, or Antwerp raspberry, I regard as the best in quality, and the surest to bear. It should not be set out between currant bushes or by the side of a fence or hedge, but in good deep soil, fully exposed to the sun and air. I plant them in hills four feet apart each way, and, if I have plants enough, put three or four in a hill, cutting off the tops and spreading out the little fibrous roots, in fact, using as much care as I would in planting a choice tree, for I have learned by experience that no after culture will fully make up for neglect in preparing the soil, or carelessness in setting out the plants. In this latitude raspberries should be planted as early as April, and all the grass and weeds kept down by hoeing them through the season, the same as corn. When shoots spring up from the roots, if not wanted for future transplanting, they must all be cut off or dug up except three or four of the best shoots near the hill, which are to be saved for the production of fruit the next year, as the stalks die after one year's bearing. It may be necessary to drive a small stake by the hill, and tie the stalks to it. In the following spring I cut out all the old canes and take off about a foot from the end of the new ones, and then spade up the ground between the hills and apply a top dressing of manure, for I find that raspberries, to produce well, want mellow and rich ground.

The other class of raspberries, or what are commonly termed black caps, require the same cultivation as the red, but there are no shoots to cut off or dig up, as this variety produces only a sufficient number of shoots for fruit the following year. The canes will often bend over and the top take root which may be transplanted the next Spring. This class requires more pruning than the red, and should be well staked, but I prefer the red variety, and by my treatment have raised several bushels on a small patch of ground.

SAMUEL HURLBURT.

Middlesex Co., Conn.

REMARKS.—The true Red Antwerp is a first rate variety—though for home use we prefer the "Fastolff." It has a large berry, which is so tender as not to bear carriage far to market. The "Brinckle's Orange," is also a very fine berry for market or home use. It is a good bearer, fine flavor, fair size, and its beautiful orange color makes it quite attractive either in the market, or on the table.—ED.]

LICE OR SCALE ON TREES.—J. C. Graves, Jefferson Co., Pa. Your soap suds wash was probably too weak. Make it very strong, using whale oil soap if it can be had, and wash the bodies about the middle of June when the scales are young. Potash and water answers the same purpose. Two washings during the season may be needful. Rubbing the bodies and limbs with a rough cloth, or with a broom, greatly facilitates the removal of the scale. The more vigorous you make the growth, by manure, ashes, or lime, dug in around the roots, the less will you be troubled with insects upon, or diseases of the portion above ground.

Grafting the Grape.

P. B. Wenner, Columbia Co., Pa. Graft the grape as you would the apple, only let it be just under the ground, *in the root*, and tie the split portions together if they do not hold the cions firmly enough. Cover with grafting wax, and draw the earth around the roots. The cions from the previous year's growth, are best cut as early as February, and inserted in May, or even early in June, after the growth has commenced—keeping the cions until wanted in a cellar to prevent their starting. There is a difference of opinion among practical men as to the utility of grafting the grape—some advise and practice it, while others think it better to throw away the old roots, if a poor kind, no matter how strong or vigorous, and start with fresh young vines.

Cultivate Rhubarb.

It will *grow* without much care—the burdock is scarcely hardier; but to have large, succulent stalks, pulpy as an apple, readily cooked, and good when cooked, it must be generously dealt with. The plant is a hearty feeder, and easily appropriates the rankest manure. If there be not a plot of it already established in the garden, select a convenient place about five feet wide, and long enough to contain say two crowns to every three members of the family the plants to be set four feet apart in the row. The bed may very well be made beside a fence, though much shade is objectionable. A very good plan is to have some roots on the south side of a board fence to start early, and others on the north side in the shade, where they will start late, and continue good much later in the season. As early in the Spring as the ground can be worked, trench it two spades deep, and work in six or eight inches of well-rotted manure. Do not throw it in in lumps, here and there, but mix it well throughout the soil. Set one row only in the middle of the bed; with good culture it will make a wide spread. Procure crowns of the Linnæus variety, put them in three inches below the surface; keep the soil loose by stirring occasionally, and entirely free from weeds. As the plants progress, water the bed now and then with wash-water and other house-slops—particularly if there be drouth—they will put out broad leaves as if in very thankfulness. A few stalks fit for the table might be gathered the first season, especially if whole roots instead of single crowns can be obtained for plants: it is better to allow the whole growth of single crowns to remain, that the roots may be firmly established.

In the Fall, cover the whole bed with stable manure two or three inches deep, and in the following Spring fork it into the soil. To bring

a few plants forward rapidly for first use, set an open box over each crown, and put in three or four inches of manure from the horse-stable. Also surround the box with the same material; this will supply much warmth and hasten growth. After the leaves put forth, it is the practice of some to place a barrel, with both heads out, over the plant, to induce a lengthening of the stalk: it also has a semi-blanching effect, and there is less acidity in the edible part. This may be done with a part of the plants. As the growth increases, year by year, and new crowns are formed, they should be divided and reset, or otherwise disposed of. If they become crowded, the growth of leaf and stalk is impeded, and the value for cooking impaired.

It is better to procure crowns than to sow seed; as at least a year of time is saved, and we may be sure of obtaining the variety desired. Where seed is sown, the product may differ greatly from the parent plant.

Bleeding of Vines.

There seems to be a difference of opinion as to whether a grape vine is injured by the excessive bleeding which ensues whenever a branch is cut off late in the Spring. A paragraph has just met our eye in Lindley's "Theory of Horticulture," which is decisive on the point. He says: "Nothing is more strictly to be guarded against, than the disposition to *bleed*, which occurs in some plants when pruned, and to such an extent as to threaten them with death. In the vine, in milky plants, and in most climbers or twiners, this is particularly conspicuous, etc., etc.....This property usually arises from the large size of the vessels through which sap is propelled at the periods of early growth, which vessels are unable, when cut through, to collapse sufficiently to close their own apertures, and they necessarily pour forth their fluid contents as long as the roots continue to absorb them from the soil. If this is allowed to continue, the system becomes so exhausted as to be unable to recover from the shock, and the plant will either become very unhealthy, or will die. The only mode of avoiding it is, to take care never to wound such trees or vines at the time when their sap first begins to flow; after a time, the demand upon the system by the leaves becomes so great that there is no surplus, and therefore bleeding does not take place when a wound is inflicted."

The *moral* of this, so far as grape-vines are concerned, is, to prune them in the Fall, or, if the work be delayed until Spring, to do it early, (say in this month) before the first flow of sap. Sometimes, it becomes desirable to remove a large cane late in the Spring, and various means have been tried to prevent the excessive bleeding at such times. Mr. Downing recommended the use of gum-shellac paste; but we know, from experience, that it is not efficacious: the strong tide of sap bursts through it and soon washes it away. Others have recommended the insertion of a raw potato on the cut end of the branch; but this has also failed in our garden, after repeated trials.

Sir Andrew Knight published a remedy which he had practiced with success: it is as follows: "If to four parts of scraped cheese, be added one part of calcined oyster shells, or other pure calcareous earth, and this composition be pressed strongly into the pores of the wood, the sap will instantly cease to flow; so that the largest branch may be taken off at any season with safety."

Fig. 1.

Vases and Statuary in Ornamental Grounds.

ECONOMICAL SUBSTITUTE FOR MARBLE, FOR THE MASSES.

Our readers will bear testimony, doubtless, that the *American Agriculturist* inclines decidedly to the *practical*. As a general rule, when preparing matter for its columns, the first inquiry is: Will this thing *pay?* If it will not bring our readers a return of solid cash, will it yet yield something substantial and truly useful? Good manners, home enjoyments and embellishments, tasteful houses, gardens, trees, lawns and various other rural decorations—these things and the like, add as much to the happiness of life as money itself, if not vastly more, and whatever promotes these, may fairly be included in the scope of this journal. We have heretofore spoken on this general subject of rural embellishment, and now wish to say a few words more, with special reference to vases and other ornamental figures for the garden and lawn.

There is an obvious propriety in the use of these objects. Beautiful in themselves, they also serve to give an air of refinement and finish to a place, which nothing else can impart. If a

Fig. 2.

handsome house stands upon a rough, untidy piece of ground, there is an apparent incongruity between the two: there is a painfully abrupt transition between the finished architecture and the rude, uncultured land. But now surround the wall at its base with a smooth terrace; set here and there upon it a shrub; twine a few vines about the porch and windows, and what a transformation! There is a felt harmony, a manifest link between the house and grounds. Carry the work a step further. Extend the lawn on all sides to the boundaries of the premises, and plant graceful trees upon it; set here and there on the terrace a classic vase, yonder a sun-dial, and further on, among the trees, a statue, or fountain with its jet of spray—have we not ascended a step higher?

The spirit of the architecture is carried out and diffused upon the grounds; nay, the sentiment and soul of the household itself are breathed all over and through the lawn, and grove, and garden, elevating the place high above the coarseness of the neighboring highway and plowed field, and making it all instinct with poetry and love.

"This is all very well, for those who can afford to buy marble vases and statues," says the economical reader, "but ah! poor me." Save your tears, Sir. You may buy marble statuary if you can, but if not, there is a very tolerable substitute for it in cast-iron. This, if well painted, will last about as long as marble itself. Our manufacturers of ornamental iron-work in this country have shown great good sense and taste, in preparing for the market copies of some of the finest statues and vases of antiquity. And it speaks well for the public taste that they have called for such manufactures. Whoever will visit one of these establishments in any of our large cities, will find much to interest him. And the same may be said of establishments where terra-cotta* is wrought into similar articles. Here

Fig. 3.

are many symbolical and other figures, of which the classical student will say, "Thereby hangs a tale"—a tale sometimes extending into remote history. Here are copies of Egyptian, Grecian, Tuscan and Roman sculptures. To the common eye, many of these will appear attractive only from their symmetry and grace, but to the eye of the scholar they will have an additional meaning. They will recall the pages of Homer, Euripides, Virgil and Horace; they will conjure up the memory of heroic actions, of ancient scenes and incidents which are full of the most romantic interest.

In a stroll through one of these establishments in this City, we noticed vases on which were represented the parting of Briseis and Achilles; Vulcan, forging for Achilles the sacred arms; Ajax supporting Patroclus; Hector holding his last interview with Andromache; Niobe and her daughter, etc., etc. Here we saw, not in marble, indeed, but in solid *iron*, copies of some of the noblest productions of genius—the works of Phidias, Apelles, Praxiteles, Angelo and Canova. And it seemed to us no light thing that the public were thus enabled to procure, at a moderate cost, specimens of the ancient sculptors which have a world-wide renown. Copies of them set near the doorway, or scattered sparingly upon the lawn, will not only answer as ornaments, but will excite the

* Terra Cotta signifies *baked clay*: the name is given to statues, vases, etc., made from a paste of potter's clay and a fine colorless sand.

curiosity of children and awaken inquiry into their history and significance. They will inspire in the young a love of the beautiful, and will form their taste according to the best models.

One of the finest vases which we saw at the establishment of Janes, Fowler & Co., of this city, was a copy of the celebrated Warwick Vase, of which we give a sketch, (Fig. 5.)

The original was produced in marble by Lysippus, a statuary of the time of Alexander the Great. In the year 1774, a fine copy of it was found among the ruins of the Emperor Adrian's Villa, at Tivoli, and was sent from thence to England, and came into the possession of the Earl of Warwick's family, where it has since remained, and whence it took its modern name. The critics tell us it is one of the finest relics of Grecian sculpture to be found in England. It is of the purest white marble. Its form is nearly spherical, with a deep, grouted rim. Two interlacing vines, whose stems run into and constitute the handles, wreathe their tendrils, fruit, and foliage around the upper part. The center is composed of antique heads in high relief. "A panther's skin, with the thyrsus of Bacchus, (a favorite antique ornament,) and other embellishments complete the composition." It is quite large, being six feet and eleven inches in diameter, and holding one hundred and sixty three gallons. In this, the ancients mixed their wine on festive occasions, and hence it was appropriately adorned with Bacchic emblems.

Mr. Downing, in his visit to Warwick Castle many years ago, met with this famous old vase, and thus speaks of it in his letters: "Passing through a gate in the castle wall, I entered the pleasure grounds, and saw there the celebrated Warwick vase—the giant among vases. It is a magnificent mass of marble, weighing eight tuns,

Fig. 4.

of beautiful proportions, of which reduced copies are now familiar to us all over the world. It was brought from the temple of Vesta, (?) and is larger than I had been led to believe, holding nearly two hogsheads. It is also rather more globular in form, and more delicate in detail, than one would suppose from the copies."

Mr. D., himself, had a fine copy of this vase on one of his lawns, wrought from Maltese stone. An American traveler in England, lately speaking of a certain Park in Birmingham, says: "The most imposing object here was a stupendous bronze vase, a fac simile of the marble one at Warwick Castle. The proprietor of it has refused £10,000 ($50,000) for it: it cost about £5,000 and six years' labor."

And now, after dealing in such large figures, it will refresh some of our art-loving readers to know that a handsome small copy of this vase in cast iron, can be bought in this country for

Fig. 5—WARWICK VASE.

$18, and one of a size larger for $30. Pedestals for the same, cost from $10 to $15 extra. A vase like Fig. 3, one foot high, without pedestal, can be had for $3 or $4. Pedestal will about double the price. Various patterns can also be found at moderate cost, in terra-cotta, or Maltese stone.

THE HOUSEHOLD.

As to Furniture—A Man's View.

The ladies must not have this matter wholly to themselves, wisely as they commonly manage it. The writer must be allowed to slip in a word, now and then, for variety, at least.

The English excel all nations in the internal decoration of their houses. The taste of the Italians runs chiefly to sculpture and painting. The French are such a race of gad-abouts, they give little study to the subject of home comforts and attractions. "The Dutch," says a lively writer, "have an indeterminate idea that a curtain is not a cabbage. In Spain they are *all* curtains—a nation of hangmen. The Hottentots and Kickapoos are very well in their way. The Yankees alone are *preposterous*."

What does this hit at the Yankees mean? Perhaps it means that we have no settled rules of propriety and taste, and that in undertaking to do a thing finely, we *over-do* it. Doubtless we are too much given to display. There is no "nobility" here, no blood-aristocracy to confer social distinction. Money, far too much, makes the man, and whoever can display that, considers himself lifted among the upper classes. Hence it comes to pass that in the furnishing of dwellings, we are too apt to value an article for decoration by its costliness, and its *evident* expensiveness. This leads to a general display of glare and glitter, than which, nothing can be more offensive to true taste, which requires something besides show and tinsel, however brilliant.

One of the most striking defects in the furnishing of American houses, is the want of keeping. There is a lack of harmony between the different articles of furniture, as to their size, style, color, arrangement. In some rooms, there is too much precision and stiffness, as though the carpet and furniture were made to be looked at, not used. Then again, the carpet, which is the soul of every apartment, is out of keeping. Large, sprawling figures overwhelm the little room; the glaring, ill-assorted colors make one's eyes ache. Why not have something more delicate, harmonious, subdued, and appropriate? Most persons who can have gas-lights, will use them, probably; but to our eyes, they are harsh and flickering. Can anything be more truly beautiful and artistic, than the old astral lamp, with its ground glass shade? Don't you remember how soft and steady a light it gave? Who has not observed that female beauty is never so fascinating as under its sweet, subdued radiance? And yet, the fashion is now for cut glass shades. They are more flashy and costly, and that's enough to recommend the gaudy abomination.

This passion for glare leads to the use of glass pendants on lamps and chandeliers, and to the hanging of numerous mirrors on the parlor walls. They reflect the lights, and give an air of brilliancy and of artificial extent to an apartment. But the mirrors destroy all ideas of the shape and proportions of the room, and with the glass danglers make up a bewildering display of glitter, glitter, glitter. It is a childish device, a weak love of show.

Just look into this imaginary parlor, not perfect, to be sure, but it has some good points. Not large, but longer one way than the other, by a few feet. Its windows are at the ends, not the sides, and they are large, extending to the floor and opening out on to a veranda. The curtains are crimson damask, looped up with silk cords and tassels of the same color, enlivened with a braid or two of gold. They have fringes of the same color. The walls are covered with a smooth paper, of a silvery grey tint, in which appear small arabesque figures, with an occasional sprig of gold; and the border is a neat band or scroll, in which crimson and gold appear sufficiently to characterize it. The carpet is thick, smooth, soft, with figures not too large for the size of the room—not strewn with mammoth bouquets, not glaring in color, but lively, yet subdued and in keeping with the hue of the curtains.

There are two sofas, low and cozy-looking—one or two large easy chairs, with arms, solid and comfortable, as if made for use; and two light reception chairs. These are of rose-wood, and, except the last, are covered with crimson plush or damask. There is a piano-forte, open and inviting the touch. Yonder is a table or two, large and small, not standing alone in the middle of the room, but near the sofas, and adorned with a few books and ornamental articles. Our favorite Astral lamp occupies the center of the largest table, with its ground glass shade delicately tinted with crimson. On the walls hang several paintings, family portraits and landscapes. Upon a stand, in one corner, lies a portfolio of choice engravings. On the mantle, are a few figures in Parian and bronze. In a vase, there is bouquet of fresh cut flowers.

* * * * * * We had hardly finished our glance at this parlor, when a lady, fresh from

England, took us by the hand and told us about her visit to the famous Stafford House in London. She spoke, in particular, about a certain small parlor there, which struck her fancy amazingly. Said she: "There was not any particular splendor of furniture, or dazzling of upholstery, but an artistic, poetic air, resulting from the arrangement of colors, and the disposition of works of *vertu* with which the room abounded. The great fault in many splendid rooms is, that they are arranged without an eye to unity of expression. The things in them may be all fine in their way, but there is no harmony of result. People do not often consider that there may be a general sentiment expressed in the arrangement of a room, as well as in the composition of a picture. It is this leading idea which corresponds to what painters call the ground tone, or harmonizing tint, of a picture. The presence of this often renders a very simple room extremely fascinating, and the absence of it makes the most splendid combinations of furniture powerless to please.

The walls were covered with green damask, laid on flat, and confined in its place by narrow gilt bands, which bordered it around the margin. The chairs, ottomans and sofas were of white wood work, varnished and gilded, covered with the same.

The carpet was of a green ground, bedropped with a small yellow leaf; and in each window, a circular, standing basket contained a whole bank of primroses, growing as if in their native soil, their pale yellow blossoms and green leaves harmonizing admirably with the general tone of coloring.

Through the fall of the lace curtains, I could see out into the beautiful grounds, whose clumps of blossoming white lilacs and violet grass seemed so in harmony with the green interior of the room, that one would think they had been arranged as a continuation of the idea."

There! Our view through a man's eyes is confirmed by the testimony of a lady—it must be correct. HOMO.

Change of Clothing—A Caution.

Don't be in haste to put off woolen garments in Spring. Many a "bad cold," (whoever saw a good one,) rheumatism, lumbago, and other aches and pains, are lurking in the first sunshiny days, ready to pounce upon the incautious victims who have laid aside their defensive armor of flannel. All *sudden* changes in the system are attended with more or less of danger, but the body can accommodate itself to almost any condition, provided it be assumed gradually. The use of flannel guards against sudden change of temperature. In a warm day, when perspiration flows freely, if it be allowed to pass off rapidly, the quick evaporation carries with it much heat from the body, and a chill may be produced, followed by derangement of some function; as 'cold in the head,' or unnatural discharge from the bowels. Flannel contains much air in its meshes, and is therefore a slow conductor of cold or heat. Evaporation proceeds from it more slowly than from cotton or linen, hence its excellence as a fabric for clothing. Many persons wear it next to the skin the year round, and find it a shield against prevalent complaints in Summer. No general rule can be given as to this; it must depend upon the constitution, and employment of the individual. In all cases, however, flannel should not be laid aside until the weather is settled permanently warm—in this latitude usually after the first of June. The change should be made in the morning, never in the after part of the day, when the energies are partly abated, and the air is usually growing cooler. Many a consumption has been contracted, by *undressing* for an evening party.

For the American Agriculturist.

Babydom.

And so "Martha" thinks "if some *capable* mother would teach us how to take care of the babies, she would be a *real benefactress.*" (See Nov. *Agriculturist*, page 342.) Ignoring the capability, this alone, surely, were incentive enough to rouse one's dormant philanthropy. Too true it is, that half the little ones are tortured with slow miseries, through what *should* be their happiest, most blithesome period of existence, *babyhood*, and that too, by the tenderest mothers—mothers who preside over their well ordered homes with much common sense and discretion, where order and regularity in the routine of duties reign supreme, from 'basement to attic;' who would think if they had a pet rabbit or pig, it must have *uniformity*, *regularity* and *fresh air* to keep it in health and fine growth; in short, who bestow all their system on every thing, but the very object that needs it most. Tell me how most babies are treated; are they not smothered in blankets, kept in warm rooms, and a bit of cool fresh air avoided as if it were a pestilence? Do they not worry and cry for this very want, and then doesn't nurse come with it to helpless mamma and insist the little creature is hungry, though nursed but a short time before!—and so, hungry or not, its cries are stilled with food it does not need—and then bona fide pain comes, and diseases often follow in dire procession, and mother and nurse are well worn out before many days with *such* a wearisome child! Oh goddess of Patience! who would not worry under such treatment! Babies appreciate oxygen thoroughly, and there would not be so many "terribles enfants" were there more of it in sleeping and living apartments.

Well, to be practical, and to the point, I must "give my experience," must I? which consists, at this present time, of as healthy specimens of boydom and girldom as ever made parents' hearts brimful of thankfulness. I have pursued from their birth undeviating regularity in sleep, food, and out door life—nothing but downright rain preventing the latter. Mothers tell me, "oh, it's a very good way, if you can only *carry it out*, but—I can't!" Well if children are not worth self denial, if they are not better than calls or company, or visiting, then they must go to the servants; but to those warm mother hearts which make light of all fatigue and care for the sake of the baby—who accept the sweet task committed to their hands by a Heavenly Father, how much better to have the key to sunny faces and joyous rippling laughter, than wry faces and shrieks "that make night hideous." If a child is born healthy, all it needs to thrive, is the carrying out of *simple, natural* laws. For the first few weeks, every two hours is often enough for nursing, after that once in three; it will then be regularly hungry and as regularly satisfied; if it cries, you will know it is not hungry; and its stomach will never be loaded.

Let it sleep in a crib by your side, never with you, then sleep is longer, sweeter and more refreshing. Never wake a child—no, not to show it to the Queen of England! Wrap it well all but the face, and take it daily into the purest air you can find. Let its bath be not decidedly cold water, and before nursing, and then another nice nap will follow. As it grows older, a few months, keep it out of doors half the time, and in Summer its best naps will be under the broad roof of heaven; and in Winter don't stop for cold, but wrapped up like a perfect mummy, out with the baby, and if you want to see the little one's cheeks take on the rose, let it feel the splendid tonic in a sharp nor'wester, and it will smile at the snow flakes as they softly melt on its velvet cheeks, and grow daily so strong and fat and happy, that the little life will be one continual hymn of praise to God for its own existence.

The observance of regular hours for the morning and afternoon nap, and laying the child in its crib, wide awake when the time comes, is of the greatest importance. It all turns on *commencing right*, and then there's no trouble. How infinitely better is it to lay a laughing, playful creature, with a good-night kiss, to sleep its long healthful sleep, than the common rocking and hushing so often repeated and often in vain—or the watching by the bedside, or the leaving of a light to go to sleep by. Never reward a child for crying by giving the article desired; wait till it stops. Teach it to amuse itself often, and not require some one to be constantly shaking a rattle, or tapping a window, but lay it on a bed or floor with a plaything; a slipper is an unfailing amusement when all other objects fail; and sixteenthly and lastly, always endeavor to have a serene pleasant face when you nurse your child; for, chameleon like, it is taking hues with its soul that will color and shape it for life and eternity. HATT.

New-Haven, Conn.

A Highly Valuable and Important Book for Every Parent and Teacher.

Though so pressed with business at this season, as to preclude miscellaneous reading, yet at the earnest solicitation of a friend, we began the perusal of a new book entitled "Education, by Herbert Spencer," which is devoted to the physical, intellectual, and moral treatment and training of children. The book is written in condensed form, and requires considerable close thought and study to follow the writer. We have read it at odd hours for six weeks past, and have just finished the last page, and here is our opinion:

This book is the most important one on the treatment of children ever written. We have derived from it hints and new suggestions in reference to the training of our own children, which have very materially changed our whole former theory and practice. We would not part with the knowledge we have gained from it for any pecuniary consideration. So strongly are we impressed with the importance of the reasoning of the work, that we unhesitatingly advise every parent, every teacher, every clergyman, indeed every person who has any thing to do with the care or training of children, to at once procure a copy and read, or rather study it carefully from beginning to end. The first half, devoted, in part, to laying down principles, will require close study and patience perhaps, and will be found less entertaining to some persons; but the practical deductions and suggestions of the second half will abundantly repay the study required. Get the book, read it through, and if you do not then say that it is worth to you and your children more than the dollar it costs, you can thenceforth discredit our judgment.

This is speaking strongly, but we mean it.

The present method, or want of method, in training children, physically, as well as intellectually and morally, is sadly at fault—as every parent and teacher doubtless feels. Mr. Spencer not only points out many of these defects, but he also directs us to a better way. We may not entirely agree with all his suggestions, but in the main they are excellent—many of them of the highest importance.

The work first appeared in four articles, in the three leading English periodicals, the Westminster, North British, and British Quarterly Reviews; and they are now thrown into a neat volume of 282 pages, and issued by D. Appleton & Co., of this City. We are glad to learn that 3000 copies are already sold, and it can doubtless be had through most booksellers. When not otherwise accessible, we will, with pleasure, procure copies and send them *post-paid* for the usual price ($1). If possible, we shall secure a large edition on such terms that it can be offered as a premium in a way that those who can not afford to buy it, can secure it by a very little effort. If successful in this plan, the fact will be announced on the last page of this paper.

The Two Wives.

Recently, two men were returning home from a beer-shop at a late hour, partially intoxicated, and one of them remarked: "When I get into my house I shall catch a terrible scolding from wife." "Ah," replied his companion, "I shall meet something ten times more intolerable than that! My anxious wife who is waiting for me at this midnight hour, will meet me with nothing but kind words and acts; but her care-worn countenance, and the thought that she has been praying for me, will be far harder to endure than the most furious invectives. If she would only scold I could answer her with harsh words. Her quiet way, and her kindness, shame me, though I am tipsy. Oh I am cruel—never shall I taste another drop from the degrading cup."—— He is keeping his word—so he informs the writer.

"Save the Pieces."

Furniture and crockery will be broken, "for 'tis their nature too," but they need not be left in that condition week after week, in these days of prepared glue and cement. Make it a rule to repair articles that are worth it, and which can be mended at home, on the same day they are injured, if it be possible; if not, set them aside, not to be used until put in order. A broken legged chair, or a rickety table, is not only a source of discomfort, but it goes rapidly to ruin when once out of order.

Mended crockery is hardly fit to be used for the table, particularly for holding cooked food. Grease and other matters penetrate the cracks, and they soon become uncleanly. Such dishes will answer to contain the odds and ends which most housekeepers have in the pantry. A subscriber, J. O. Harris, La Salle Co., Ill., recommends the following preparation for mending almost all articles that can be "stuck" together. It is named "Diamond Cement" and is often sold under that name at 25 cents for a 2 oz. vial:

Take 1 lb. White glue.
¼ lb. White lead (dry),
1 qt. Rain water,
½ pt. Alcohol.

Place the first three ingredients in a kettle, and set the kettle in a dish of water. Boil it until the glue is dissolved; then add the alcohol, and boil again until all is well mixed. Keep it in well stopped bottles. Use it in the same manner as glue. Should it be a little hardened when wanted for use, soften it by placing the bottle in warm water.

Saving Matches.

They cost less than half a cent a paper, perhaps, but two gross of papers wasted, would, if *saved*, pay for the *Agriculturist* a year; besides, carelessness is a bad habit, however small the matter involved. Let the girls and boys roll up "lighters" of waste paper, to be used after the fire is once burning; it will take but little time to prepare them, the children like the sport, and will be kept out of mischief while thus employed; there will also be avoided much of the unpleasant smell of phosphorous and brimstone so offensive to most persons. A subscriber recommends another plan that we have seen in use, which is quite convenient and saves the trouble of making the paper lighters. Keep, say two tablespoonfuls of cheap alcohol in a small bottle: to the cork attach a wire long enough to reach the fluid, with a bit of cotton fastened on its end. The fluid on the cotton is always ready to be lighted, and will burn long enough to light several lamps.

Care of Stoves and Pipes.

When stoves are no longer needed, they are quite frequently set aside in an out-building, or other out of the way place, with no further thought, until again wanted for use. If neglected, the rust of the Summer, may injure them more than the whole Winter's wear, particularly the parts made of sheet iron. They should be kept as free from dampness as possible, and occasionally cleaned if rust be observed. W. Conrad, Somerset Co., Pa., recommends to apply a coating of linseed oil to the pipes before putting them away. It should be done while the pipes are warm (not hot) and kept at a low temperature five or six hours. This, he says, will impart a fine luster, and prevent rusting.

Hints on Cooking, etc.

(Contributed expressly for the American Agriculturist.)

Mrs. J. F. King, of Wayne Co., Ga., sends to the *American Agriculturist* the following prescription for two articles quite popular at the South:

SOFT HOMINY BREAD.—1 spoonful of hominy *cooled* (after boiling, we presume); a small lump of butter; 1 egg; ½ pint of wheat flour; mixed with milk to the consistency of cream. Pour into a spider, and bake.

HOMINY WAFFLES.—2 spoonfuls of hominy; a small lump of butter; 2 eggs; 1 quart wheat flour. Thin with milk, to the consistency of *very thick* cream. Bake in waffle irons.

MEXICAN STEW.—Contributed by J. B. Howe, Worcester County, Mass. Take a beef shank, saw it in three or four sections, boil 7 or 8 hours, or until the meat cleaves readily from the bones, let it cool, slice it across the fiber, with a sharp knife, add the marrow from the top of the pot, with enough of the gelatine to make a gravy, season with onions, sage and pepper, and warm up in a fry-pan.

APPLE RUSSE.—Aunt Sue says "this is a very stylish but simple pudding, prepared as follows: Make some apple sauce, *very sweet;* spread some slices of bread generously with butter on both sides; line a pudding-dish with these slices, (sides and bottom), then pour in your apple sauce, and bake until the bread and butter is nicely browned. When done it *should* turn out of the pudding-dish all standing, but if you are preparing it for company, it is almost sure to turn out *ker-slump!*

DELICATE PIE.—The grated rind and juice of a lemon; 1 cup powdered sugar; the yolks of 3 eggs; 3 tablespoonfuls of flour, ½ of a cup of water. Take the whites of the 3 eggs, and 3 tablespoonfuls of sugar; beat to a froth, and turn it over the pie when baked. Set it in the oven again, and let it remain 3 minutes. Use but one crust.

TUMBLER CAKE.—4 tumblers flour, 2 tumblers of sugar; ½ tumbler butter, 1 tumbler milk, 2 eggs; 1 teaspoonful of saleratus; 1 of cream tartar.

SILVER CAKES.—3 teacupfuls of sugar; 1 of butter; whites of 8 eggs; 1 cup of sweet milk; 3 cups of flour; or 1 teaspoonful of cream tartar; ½ teaspoonful of soda.

CAROLINE CAKE.—Contributed to the *American Agriculturist* by Mary E. Brotherton, Stephenson Co., Ill.—2 coffee cups of white sugar; 3 of flour; 1 of sweet cream; 2 tablespoonfuls melted butter; the whites of 5 eggs, well beaten; ½ teaspoonful cream tartar; ¼ teaspoonful soda; ½ pound citron; 1 teaspoonful ext. lemon. Pour *half* the mixture in your baking dish. Slice the citron over it, then pour in the rest, and bake immediately.

Mrs. Susan S. Butler, of ——— Co., Ohio, sends to the *Agriculturist*, a number of items, or recipes, which she says she has tried and approved—and some of them she has *improved*. We select the following five, the first four of which have been endorsed to us by a good housekeeper near at hand:

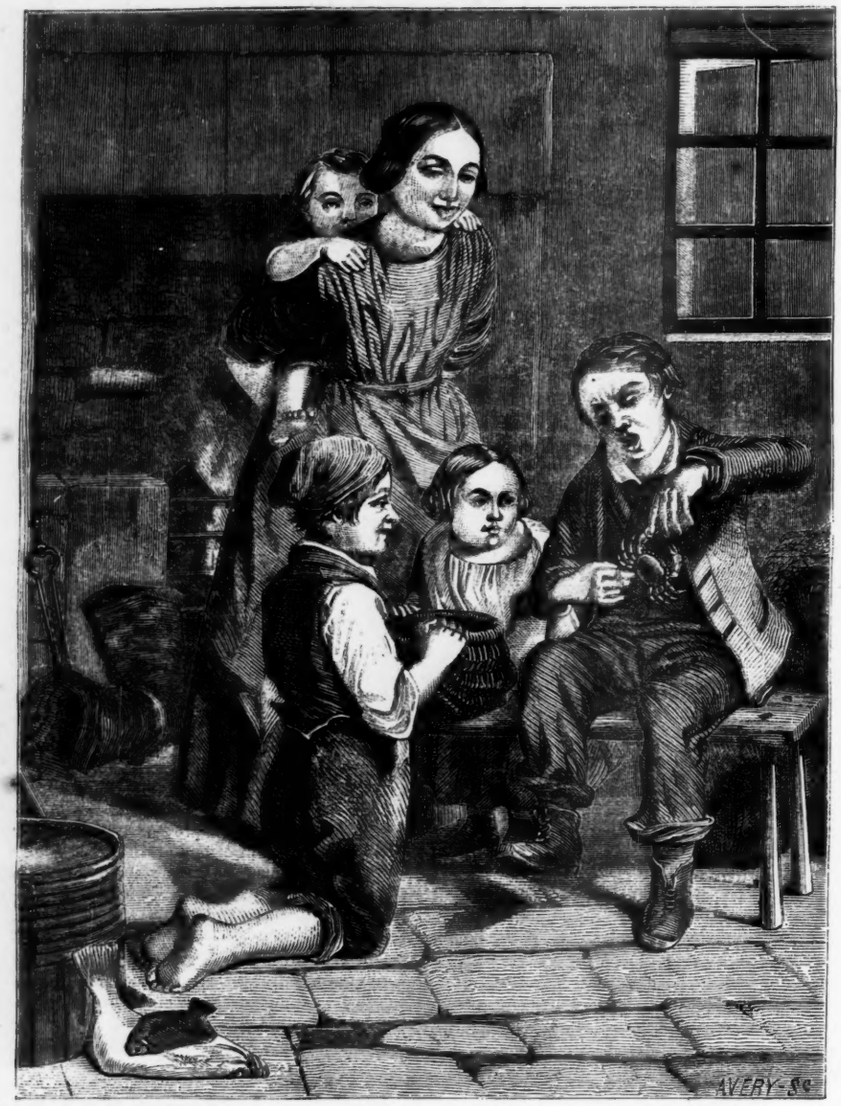
BOILED CUSTARD.—Put one quart of milk and a teacupful of white sugar into a tin pail, and set the pail into a kettle of water and heat it. When at a boiling heat stir in four or more eggs well beaten. Keep it constantly stirring until it begins to thicken or look creamy. Then remove from the fire and pour at once into a cold dish. If left in the pail, the heat of the tin will curdle it around the edges. Flavor with vanilla or lemon. It is very good to be eaten with cake.

WASHINGTON PIE.—Stir well together: 1 cup of sugar, 1 beaten egg, ½ cup butter, ½ cup sweet milk, ½ teaspoonful soda, 1 teaspoonful cream of tartar, 2 cups flour, and flavor with a little grated nutmeg. Bake in two round tins. Turn one of the cakes bottom up, on a plate, and spread over it peach or other jelly, or cranberry, or other sweetmeats, and lay the other cake upon it. Frost, or sift on powdered sugar.

A GOOD LEMON PIE.—Beat the yolks of 2 eggs with 4 tablespoonfuls of sugar, 1 tablespoonful of butter melted, and the juice and grated peel of a lemon. Put the material into a crust and bake. When cool, beat the whites of the eggs to a froth with 2 tablespoonfuls of fine white sugar, and spread it over the pie. Put the pie back into the oven and let it just brown over.

STARCH CAKE.—Beat the whites of 5 eggs well, adding 2 cups of white sugar, 1 cup of butter, 1 cup of starch dissolved in a cup of sweet milk, 1 teaspoonful of soda, and 2 of cream of tartar. Flavor to your taste and bake.

TO CLEAN RIBBONS.—Mix 1 tablespoonful of pure honey, 1 of good soft soap, and a little more than a tablespoonful of brandy. Place the above upon a clean board, and rub in the mixture with a flannel cloth. Rinse clean with well water, avoiding any wringing. Iron on the wrong side. [This is good for ought we know, though we can not understand the chemistry of the mixture, nor do we like the soft soap. Would not good castile, or other hard soap, be better.—ED.]



AN IMPRESSIVE LESSON IN NATURAL HISTORY.—FROM A PAINTING BY HELMSLY.
Engraved for the American Agriculturist.

The Editor with his Young Readers.

A CAPITAL PICTURE.

Those of you who live near the salt water, will have no difficulty in understanding the trouble of the poor fellow who is making such amusing grimaces; you have no doubt often felt how sharply a crab will bite if not carefully handled. Very likely this lad has come from some distance inland, to visit his cousin, the fisher-boy, and never having seen such a creature, nor learned his habits, is taking his first lesson in this branch of natural history. He will not soon forget his first *impression*. As he will receive no serious injury, we can excuse his cousin for laughing at him. Perhaps the most attractive face in the group is that of the little girl, who looks on with real sympathy for the sufferer. The baby, peeping over his mother's shoulder, with eyes of wonder, adds much to the scene. But the picture tells its own story so perfectly, little need be said about it. Study it carefully; it is full of thoughts, and several examinations will be necessary to perceive them all.

A brief description of the crab may be interesting to those who live at a distance from the sea coast, and have never seen the animal. His shape is well shown in the picture. He has five legs on each side of his body, the two front ones end in strong claws, with which he seizes his food, and also defends himself, as the boy in the engraving has learned. He is entirely covered with a crust-like shell, not as hard and thick as that of the turtle. As he outgrows this, it bursts open, and the animal emerges destitute of any protection except a thin skin, which, however, in a few days hardens and forms another shell. When in this state thousands of them are devoured by fish. There are several species of crabs; the one here shown lives in salt water, some other kinds are amphibious, and dig holes to live in on the edge of the water. They swim rapidly, and are also able to run nimbly when upon land. The joints of their legs are so constructed that they can move almost equally well forward, backward, or sidewise.

They are excellent for eating, and are caught in nets. A common way of taking them, which is very often practiced, is to tie a bit of meat to a string, lower it into the water, and when seized by a crab, draw it gently to the surface, and secure him with a hand net. A traveler in the East Indies related that he had seen a monkey fishing for them by sitting on a bank, with his tail hanging down in the water. When a crab seized it, the monkey gave a sudden spring, (he would be likely to,) jerked him upon the shore, and devoured him at his leisure. This, however, we have always considered a traveler's tale, though monkeys are very cunning, and it may have happened.

AMUSING GAMES.

A few evenings since, we saw the following games played at a party, in which old and young joined. They created much merriment, particularly the latter one. In the first, called "Find the Ring," a ring was slipped on to a small cord long enough to extend around the circle of players. Each person took hold of this cord, the ends of which were tied together so that the ring could not drop. The players stood near enough together to pass the ring from the hands of one to another. One of the party stood in the middle of the circle, and all together commenced moving their hands back and forth, as though passing the ring. The one in the middle endeavored, by watching closely, to detect whose hand contained the ring. This was not always easy, as the players all tried to conceal it by passing it slyly from one to another, and also to attract the attention of the "finder," by pretending to pass it when it was not in their hands. The person in whose hand the ring was found, was obliged to take his place in the middle; if the "finder" selected the wrong party as possessor, he must try again—and perhaps submit to some penalty.

The second game, called "The Voyage to India," was calculated to try a person's power of keeping a sober face, as every one detected laughing must be counted out until the next game. All took their seats in a circle. One commenced the play by saying to his right-hand neighbor. "My brother has returned from India." His neighbor asked, "What did he bring you?" "A fan," was the reply; then the first speaker waved his hand as though using a fan, while his neighbor held the same conversation with the one on *his* right hand, and then commenced waving his hand. This was repeated all around the circle, until each one sat fanning himself with one hand. When it had passed around, the leader said to his neighbor, "My brother brought me two fans," and at the same time commenced fanning himself with both hands; and this was passed around the circle from one to the other until all were industriously using both hands. "My brother brought me a boot," said the first speaker, swinging his foot back and forth, which went the rounds, then two boots were swung; thus all the hands and feet of the party were in motion. By this time the scene was so ludicrous that most of the company had joined in a hearty laugh, and were obliged to leave the ring; but some five or six yet remained. "My brother brought me a hat," said the leader, shaking his head, hands, and feet, and all followed the example, "He brought me a cushion;" then, hands, feet, head, and body, were all set in motion, and the gravest of the company could hold in no longer, and so the play ended with a shout. If this had failed, the leader intended next to mention a whistle; if any could keep from laughing after that, we think further trial would have been useless. The above plays are probably not new to all of *you*, though *we* had never seen them before. Perhaps you have games in your neighborhood which will be new in other sections. Please send descriptions of them. Make them so plain that they could readily be played by following the instructions given. We have several on hand yet to be published. Instructive games are preferable—though there is no objection to an occasional innocent play on purpose to have a good laugh—it oils up the working machinery, cures *mental rheumatism*, and fits one for active duty.

SHAKING HANDS.

Why do people shake hands on meeting? Can any one tell how the custom originated? It is not a universal practice. In some countries when friends meet, they lay their hands on their hearts and bow; in others, they salute by rubbing their noses together!—but most civilized nations shake hands, as we do. We will leave you to find the answer to our question by thinking, inquiring, and reading. By searching for information on such matters much may be learned about other and more important subjects; just as it is said an Indian while hunting for goats on the mountains in Bolivia, South America, found the silver mines of Potosi, the richest in the world.

Now for a Big Dictionary, Boys and Girls.

By referring to the last page, our young friends will see that the Publisher has now put it in their power to get a splendid dictionary, which will be very valuable, and last a life time. Worcester's new book is the largest dictionary ever published in this country, and as a source of information, as well as a guide to the correct spelling and pronunciation of words, it is invaluable to every person, especially to the young. All that is required to get this book, is simply to find ten new subscribers to take the *Agriculturist*. *They* will each get their dollar's worth in the paper, and some choice seeds thrown in, and *you* will get the dictionary free. But says one, "Everybody here takes the paper now." Well, take a copy or two of the paper as samples, and go into some other neighborhood; and write to your uncles or other friends telling them what you know about the paper, and how much you think of it, and get them to try the paper for a year. By perseverance and effort you will succeed, and you will feel well paid when you carry home the splendid dictionary as your own (if you can carry it alone, for it weighs nearly *ten pounds!*). The scholars in every school might join their efforts, and secure one for the teacher's desk, where it will be for the general benefit of all.

Uncle John's Study.....IV.

BY RALEIGH TRUMAN.

More about the Debuscope—Another instructive and amusing Instrument.

MR. EDITOR:—Since you published the method of making the "Debuscope," I have been greatly pleased to know that many of the *Agriculturist* family have supplied themselves with so beautiful an instrument. It not only affords pleasing and almost endless amusement, but, as Grace has proved, it can be made very useful. The last time we met in the "Study," she brought several pieces of worsted and bead work. She had obtained new and handsome patterns for them by placing the Debuscope over bits of worsted and silk, and copying the beautiful figures which it reflected. Uncle John suggested that it would be of great service in designing ornamental figures of every kind, for calico printing, shawls, wall papers, oil cloths, gold and silver

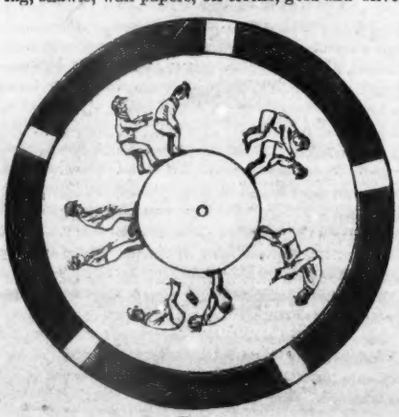


Fig. 1.

work, etc. While he was speaking of this, Fred was busy untying a package he had brought, and presently he displayed a circular card of pasteboard on which were colored figures. They were represented in various positions, as if playing at the game of "leap frog." (In this play, one boy bends over, and places his hands upon his knees, while the one behind him springs over his head.) Besides this circular card, there was another larger one, around the edge of which were square openings. The larger card was covered on both sides with plain dark paper. There was a hole in the middle of each card. Fig. 1, shows the smaller card containing the figures; it is represented as being laid upon the larger one. You can see the dark margin and the openings around the border of the larger dark card.

"Now," said Fred, "I can make these fellows play a lively game of leap frog, and after you have all seen them, I want Uncle John to explain what makes it look so, for I'm sure that pictures can't jump, though *I've seen them with my own eyes.*"

He then placed the small card over the larger one as shown in Fig. 1; and put a small wooden pin through the holes in the center. A small ring (a

Fig. 2.

pierced cork would answer) was next slipped on to the pin; it fitted tightly and held the two cards close together and against the head of the wooden pin. The pin, which was about two inches long, was then inserted in a hole on the end of a stick or handle, in which it turned very easily. Fred now took his position before the looking-glass, held the handle in his left hand, and with his right hand, turned the cards around; being held together they revolved as if there were but one card. By looking through the openings in the large card, he could see the colored figures *in the looking glass.* Fig. 2, shows the way in which the apparatus was used.

After he had shown us how to manage it, we each tried it, and the appearance it made was very amusing. The figures did indeed seem to be alive, and to be playing at a merry rate.

After examining this, Fred used other cards having different figures, in place of the one first used. One represented a blacksmith working at his anvil, another, a dog catching a fox, etc.; and when the card was twirled, the figures seemed alive and in motion. The apparatus is so easily made by any one who can draw, that I doubt not many of my young friends will construct one for themselves. The cards for figures are most conveniently used when about 7 inches in diameter—the outer or larger card being half an inch larger, and having 10 openings around the margin. Each figure was repeated about ten times on Fred's cards. They were drawn to show each one a little further along in the act represented; as in Fig. 1, where the boy first makes ready, then springs a little, then is shown higher, then over his companions head, and so on.

After we had examined it sufficiently, Uncle John gave an interesting explanation of the reason the figures appeared in motion, which I must reserve until the next letter, for it would make this too long. Perhaps some of the boys or girls will make a "magic plate" as it is called, before that time; if so they might try and find for themselves the reasons for the phenomena; it would be a good exercise for them to write out their thoughts for the *Agriculturist.* [Perhaps some of you may describe the matter even better than Raleigh; if so, your explanation will be used instead of his.—ED.]

THE FIRST AMERICAN POETRY.

There are few girls or boys in this country who have not heard the nursery rhyme sung by their mothers while rocking the cradle,

"Lul-a-by baby upon the tree top;
When the wind blows the cradle will rock;
When the bough breaks the cradle will fall,
And down will come cradle and baby and all."

But how many of you know the origin of the simple lines? We have the following account from the records of the Boston Historical Society. Shortly after our forefathers landed at Plymouth, Mass., a party were out in the field where the Indian women were picking strawberries. Several of these women or squaws, as they are called, had *papooses*, that is babies, and having no cradles, they had them tied up in Indian fashion, as shown on page 21, (January,) and hung from the limbs of the surrounding trees. Sure enough, "when the wind blew, these cradles would rock." A young man of the party observing this, peeled off a piece of bark, and wrote the above lines, which were, it is believed, the first poetry written in America.

A SMART REPLY.—A father was winding his watch, when he said, playfully, to his little girl, "Let me wind your nose up!" "No," said the child, "I don't want my nose wound up, for I *don't want it to run all day.*"

QUESTIONS FOR YOUNG PHILOSOPHERS.

We find the following good subjects for thought and observation in the "Massachusetts Teacher."

Why, on freezing mornings of early Winter, do stones seem to be partially sunk in the ground?

Why is considerable frost sometimes seen on the lower part of window panes, while there is but little on the upper part and none in the center?

Why is frost sometimes found on the nail heads on the outside of a barn door, there being no frost on the surface of the boards around the nail heads; and why at other times are the nail heads free from frost when the boards are covered with frost?

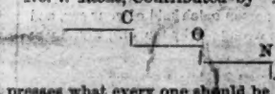
NEW PROBLEMS.

No. 5.—*Biblical Enigma.*—Contributed by S. J. Daman, Plymouth Co., Mass.

A A A A A A A M M T T N N H H E R

These rightly placed give two words which occur but once in the Bible.

No. 7. *Rebus*, Contributed by "Aunt Chloe," expresses what every one should be. What is it?



No. 7.—*Figure Puzzle.*—Can you draw a figure like this, lifting the *pencil* from the paper only twice, and not going over the same line twice? It is said

that the girls and boys in France, old and young, have been puzzling over this for a long time. We do not think it can be done. If any one can do it, please tell us how.

ANSWERS TO PROBLEMS.

No. 3.—*Biblical Enigma*, (See page 55)—*Answer*, "Zaphnath-paaneah," found in Genesis, xli, 45.

No. 4.—*Illustrated Rebus*, (See page 55)—*Answer*, "All is not gold that glitters."

Correct answers received up to Feb. 15:

J. L. McCreery, Nos. 1, 2, (Rebus sent has good points;) Jarvis H. Arnold, 2; A. J. Teed, 2; H. C. King, 3; R. M. Hasbrouck jr., 1, 2; Wm. S. Lea, 3; T. B. Dalrymple, 3, 4; Martin Sidener, 4; Z. Hathaway, 4; S. Joyce, 4; Isabella C. Miller, 1, 2; E. S. Perry, 4; Cornelia C. Cunington, 4; Willie Carpenter, 4; Frank Baker, 2; A. M. Daniels, 1, 2; Libbie M. Leete, 3, 4; "Cousin Ada," 4 (Rebus good for the first trial); H. S. Wells, 4; Willie Johnston, 3; Hannah S. Osborne, 3, 4; Emma A. Church, 3, 4; "Wall Street," 4; George H. Hurd, 4; Ann E. Downing, 3, 4; Jennie Flatzinger, 4; Gipsy E. Clay, 4; A. C. Eaton, 4; "Collington," 3, 4; Abel S. Titsworth, 1, 3, 4 (in good rhyme); E. E. Woods, 3, 4; M. T. Woods, 4; Thos. Bouton, 4; Clara M. Stephens, 4 (8 years old and writes a verry pretty letter); Sallie A. Crater, 3, 4; George S. Bell, 3, 4; M. Thomen, 3; George Burton, 3; Edward P. Nichols, 4; N. O. H., 3; W. Boyers, 3, 4; Mrs. B. F. M., 4; Mrs. E. Buchanan, 3; Julia D. Shipley, 3 (your kind words are encouraging); J. Boyden Smith, 3 (aged 7!); Annie L. and T. H. Smith, 4; Isaac C. Halstead, 3, 4; Mary E. Bootherton, 4; James H. Gamble, 3, 4; S. J. Daman, 3; M. B. Eshiman, 3, 4 (Rebus fair); George W. Howard, 4; Jennie M. Rowe, 4; J. Albert Evans, 3, 4; N. H. Haynes, 3; C. Quackenboss, 3, 4; Robert M.

Hasbrouck jr., 4; Maria E. Hagerty, 4; W. J. Boothray, 3; Sam. McQuitty, 3 (your rhyme was witty); John R. Burney, 4; R. A. Campbell, 3 (in good rhyme); Alvin R. Murray, 4; James M. Wilson, 3, 4; Charles Veatch, 3, 4; Thos. O. Thornton, 3; Amos M. Peck, 3, 4; Ellen J. Merritt, 3; Mrs. L. Bygington, 3; Mrs. W. J. Hughston, 3; Otway B. McCluire, 3, 4; H. W. Knight, 3, 4; John M. Betts, 4; George Roberts, 3, 4; Cyrus H. Forwood, 4; Albert C. Siewers, 4 (nothing like *trying*); Chas. L. Siewers, 3, 4 (rebus fair); L. Winfield, 3, 4; Edward Davis, 3, 4; Lizzie A. Johnson, 3; David C. Henshey, 3; E. D. Lightfoot, 4 (Amen!); Godfrey Serue, 3 (letter all right); Sarah C. Vansyckle, 3; Miss. R. S. Gillett, 3; S. Henry Ward, 4; Mrs. Amelia Storrs, 4; Edward Haynes, 4; Jonas H. Branch, 3, 4; Katy Ward, 3, 4; Herman B. Cook, 4; Henry M. Clark, 3, 4; Libbie R. Clark, 3, 4; M. L. Andrews, 3, 4; Edward Willis, 3; T. S. Wright, 4; E. Virginia Mills, 3; Henry Robinson, 3, 4; J. W. Colcord, 3, 4; Harmon Pomeroy, 3; Jane B. Parks, 3; Mary L. Wint, 3, 4; Anna Lowell, 4; C. Humphrey, 3, 4; Alice B. Coggeshall, 3; Wm. D. Avery, 3, 4; R. Johnson, 4; Willy Worthyman, 4; Mary E. Servoss, 4; Thos. D. Smedley, 4; James H. Miller, 3, 4; N. N. Bailey, 4; Edward T. Smith. 4; Arthur M. Daniels, 3, 4; Seth A. Wilson, 3; Lester A. Miller, 3 (in good rhyme, written several years since when the question appeared in a N. Y. paper); Kate Negley, 4; Elizabeth Bonsall, 3; R. W. Bonsall, 3; Sarah E. Hoxie, 3; C. E. Hillman, 3; Julia Bonniwell, 3, 4; John Mott, 3; Mrs. Martha McKelvey, 3; George E. Hull, 3, 4; E. F. Coffey, 4; L. W. Page, 3; Mrs. A. B. Gage, 4 (Sorghum, *perhaps*, corn probably—no bulbs on hand); S. McDonough, 1; John Stateser, 3, 4; Ada L. Danley, 4; C. L. Vest, 1, 3.

Ough!

Wife, make me some dumplings of *dough*,
They're better than meat for my *cough*,
Pray let them be boiled till hot *through*,
But not till they're heavy or *tough*.
Now, I must be off to my *plough*,
And the boys, (when they've had *enough*,)
Must keep the flies off with a *bough*,
While the old mare drinks at the *trough*.

A QUANDARY.—If a person catch hold of your ear, and ask whether he has the wrong pig by the ear, would you answer yes, or no?

PREMIUMS FOR 1861.

Vol. XX.

☞ In selecting articles for premiums, we have aimed to get such as are *useful* and as have been most frequently called for by our readers. ☞ WE WISH IT DISTINCTLY UNDERSTOOD *that these premiums are offered in good faith—no cheap, trashy, imperfect, poorly made or second-hand thing, will be sent out, but each article offered, is the best of its kind, and every one will be selected by the publisher from the very best manufactured. They will be the best sold in the market at the prices named.*

☞ We offer nothing *for competition*. Each premium is for a specified number of subscribers, and no one's remuneration will depend upon what other unknown persons are doing. Every one aiming for a premium, knows just what he or she, is working for; and also that if a higher premium is not secured, a lower one can be taken.

☞ The premiums are offered for subscribers for Volume XX (1861), whenever received. Canvassers will have time for completing their lists, but the premium will be paid as soon as any list is made up—if duplicate lists are sent, to refer to at once. ☞ Clubs need not be confined to one P. O.

Premium A.

130 Subscribers at 80 cents each, (or **90** at $1 each,) will entitle the person getting up the club to one of *Wheeler & Wilson's* best **$45 Sewing Machines,** (including **Hemmers**) new from the factory, and of the very best make. There is no better family machine than this made, as we have proved by three years' use in our own family. We want no better.—The machines will be selected new at the manufactory, be well boxed, and forwarded without expense to the recipient, except for freight charges after leaving the city. Full instructions for setting up and using, go with each machine.

Premium B.

130 Subscribers at 80 cents each, (or **90** at $1 each,) will entitle the person getting up the club to a set of *Appleton's* **New American Cyclopædia,** now in course of publication, consisting of *fifteen large volumes* of 770 pages each. This is a magnificent work, forming a whole library embracing every topic of human knowledge. Eleven volumes are now ready, and the remaining four will be furnished as fast as issued. Price, $45.

Premium C.

98 Subscribers at 80 cents each, (or **69** at $1 each,) will entitle the person getting up the club to one of *Willcox & Gibbs'* **$35 Sewing Machines,** including a set of **Hemmers.** This is the best machine of its kind, (sewing with one thread), and has several points superior to others. It is neat, well made, simple in its operation; and having tested one for some time past in our own family, we can recommend it to those who can not afford to buy the higher priced double-thread machines. (The regular price of this machine is $30, but we have included in our offer $5 extra for the set of *Hemmers*, because those used with this machine are very simple and effective, and should go with every one sent out.) The machines given as premiums, will be selected new at the factory, be well boxed, and will be forwarded to the recipient free of expense, except for freight after leaving the city. They will go out set up ready for use, with printed directions for operating.

Premium D.

65 Subscribers at 80 cents each, (or **32** at $1 each,) will entitle the person getting up the club to one of the New **$10 Wringing Machines,** described on page 247 of the August *Agriculturist*. This is one of the best labor-saving inventions of the day, and we unhesitatingly say that it will pay to have one to assist in the washing of every family, even if of only moderate size. We would not take $50 for our machine, if another could not be purchased.

Premium E.

45 Subscribers at 80 cents each, (or **20** at $1 each,) will entitle the person getting up the club to one of *Kendall's* **Aneroid Barometers,** described on page 232 of the August *Agriculturist*. This is a good portable instrument, and valuable to every person as a weather guide, as well as for scientific purposes. (New price $7.50.)

Premium F.

50 Subscribers at 80 cents each, (or **26** at $1 each,) will entitle the person getting up the club to one of the best **$8 Straw and Hay Cutters.** [If preferred, the best **$8 Subsoil Plow** (two-horse) will be given.]

Premium H.

40 Subscribers at 80 cents each, (or **21** at $1 each,) will entitle the person getting up the club to one of the best **$6½ Hand Corn Shellers**—a convenient, effective, and useful implement.

Premium I.

30 Subscribers at 80 cents each, (or **16** at $1 each,) will entitle the person getting up the club to one extra copy of Vol. XX, and also to the **4** previous unbound **Volumes** of the *American Agriculturist*, (16, 17, 18, 19,) *sent post paid.*

Premium J.

26 Subscribers at 80 cents each, (or **13** at $1 each,) will entitle the person getting up the club to a **Pocket Microscope** with the celebrated "hour-glass," or Coddington lens, in a solid silver case. Sent post-paid.

Premium K.

25 Subscribers at 80 cents each, will entitle the person getting up the club to an extra copy of Vol. XX, and also to any *three* of the unbound volumes 16, 17, 18, and 19 sent post paid. ☞ **20** Subscribers at 80 cents each to an extra copy of Vol. XX, and *two* of those volumes. ☞ **15** Subscribers at 80 cent each, to an extra copy of Vol. XX, and *one* of the previous volumes.

Premium L.

20 Subscribers at 80 cents each, will entitle the person getting up the club to an assortment of *Windsor & Newton's* **Water Color Paints**—consisting of 12 colors, put up in a neat mahogany case, with brushes, etc. These Paints are imported from London, and are by all considered the best in the world. They are adapted to the finest work, or they will make a neat and appropriate present to any of our younger readers. They will be sent post-paid any where within 3000 miles. (If to go to the British Provinces or to the Pacific Coast, the recipient will need to send 84 cents for extra postage above the 6 cents per ounce which we pay.)

Premium M.

15 Subscribers at 80 cents each, will entitle the person getting up the club to an Assortment of *Osborne & Hodgkinson's* **Water Color Paints,** consisting of 24 colors or shades, put up in a mahogany case with brushes, cups, etc. These are of American manufacture, and though not so fine as the above, they will answer for ordinary practice by children or beginners, and for common sketching. They will also be sent by mail, post-paid. (If to go to the British Provinces, or to the Pacific Coast, $1,05 will need to be sent by the recipient to pay the extra postage above 6 cents per ounce.)

Premium N.

10 Subscribers at 80 cents each, will entitle the person getting up the club to any *one* of the four previous unbound volumes (16, 17, 18, or 19,) sent post-paid.

Premium O.

237 Subscribers at 80 cents each (or **125** at $1 each) will entitle the person getting up the club to one of *Geo. A. Prince & Co.'s* **$75 Melodeons** (5 octaves). These Melodeons are of very superior tone and finish. We have ourselves used one (costing $150) for two years past, and it has given the highest satisfaction, and is pronounced by all who have heard it, as one of the very best. The different priced instruments are of equally good tone—the price varying with the size and style of finish. The size, prices, etc., of these instruments can be learned particularly by sending a stamp to Geo. A. Prince & Co., Buffalo, N. Y., for an illustrated descriptive catalogue. The instruments given as Premiums, will be sent new directly from the factory at Buffalo, ready boxed, and without extra expense to the recipient, except for freight after leaving the factory.

☞ The above premium list may be made up by the members of a congregation, or Sabbath School, and an instrument thus secured for a church or school-room.

Premium P.

182 Subscribers at 80 cents each (or **105** at $1 each) will entitle the person getting up the club to one of *Geo. A. Prince & Co.'s* **$60 Melodeons** (4½ octaves.) See remarks above.

Premium Q.

130 Subscribers at 80 cents each (or **90** at $1 each), will entitle the person getting up the club to one of *Geo. A. Prince & Co.'s* **$45 Melodeons** (4 octaves.) See remarks above. **N. B.**—Higher priced Melodeons will be given for larger lists, in the same proportion.

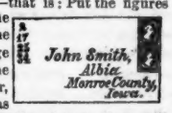
Book Premiums.

Valuable Book Premiums.—Instead of the above premiums, any person getting up a club of 20 or more names may choose any desired Books from the list (advertised on page 350 of Nov. No.) *to the amount of 12½ cents for each name forwarded at 80 cents*, (or 32½ cents for each name sent at $1,) and the books will be sent post-paid. (If to go over 3000 miles, the recipient will need to send 20 cents for extra postage on each dollar's worth of books.) ☞ Persons making up a club for any of the above premiums, and getting some names over the required amount, will be entitled to books for the surplus names.

Seeds for Free Distribution in 1861.

Each subscriber for the twentieth volume of the American Agriculturist (1861) *is invited to select four or five parcels of seeds from the list given below*—**provided the following conditions be noted and complied with.** (For further remarks see Febr. No., page 60, or Jan. No., p. 5.)

If to go by *mail*, the applicant will (of course) furnish *prepaid* envelopes, of ordinary size, which should be prepared as in the engraving here given—that is: Put the figures corresponding to the Catalogue plainly on the upper left hand of the envelop, and put all the postage stamps upon the right side of the envelop,—one above the other, when two or more are needed, as shown in this pattern. Arranging the stamps thus, will prevent the seeds being crushed in the stamping process in the Post-Office. One ordinary envelop will generally hold the amount of seed-packages carried by two or three stamps. ☞ *The amount of stamps can be calculated from the Catalogue. Single* 1-cent stamps *on letters are of no value, unless there be even threes of them, as letter postage is rated by the half ounce.*



Canada subscribers, and those on the Pacific Coast, will need to substitute U. S. 10-cent stamps (or money) in all cases where 3-cent stamps are named in the catalogue. (Postage is not necessarily prepaid *here*, on Canada letters.)

When several persons send together, it will frequently be cheaper to receive seeds by Express.

[Descriptive Notes upon these seeds are given on pages 3, 4, and 5, of January number.]

Field Seeds.

140—Imported Giant Wheat, requires ¼ of a 3-cent stamp for postage on each package.
2—Improved King Philip Corn—Single, double, or triple packages, as desired, requiring 1, 2, or 3 stamps.
3—Stowell's Sweet Corn.....Same packages as No. 2.
141—Darling's Early Sweet Corn....Same packages as No. 2.
142—Yellow Stone Turnip.....¼ of a 3-cent stamp.
143—Waite's Eclipse Turnip.....½ of a 3-cent stamp.
98—Long Red Mangel Wurzel.....One 3-cent stamp.
101—Improved Long Orange Carrot.....½ of a 3-cent stamp.

Vegetable or Garden Seeds.

8—Daniel O'Rourke Pea.....Packages same as No. 2.
9—Champion of England Pea.....do. do.
58—Napoleon Pea.....do. do.
130—Great Eastern Pea.....One 3-cent stamp.
12—Green Kohl Rabi.....One-third of a 3-cent stamp.
13—Enfield Market Cabbage.....do. do.
145—Flat Dutch (Winter) Cabbage.....do. do.
146—Early Battersea Cabbage.....do. do.
147—Neapolitan Cabbage Lettuce.....do. do.
148—Long dark Blood Beet.....do. do.
149—Extra early Bassano Beet.....do. do.
74—Solid White Celery.....do. do.
150—Early Paris Cauliflower.....do. do.
151—Yellow Danvers Onion.....do. do.
95—True Hubbard Squash.....do. do.
152—Fine large Cheese Pumpkin.....do. do.
153—Large Red Tomato.....do. do.
154—Ice-cream Water Melon.....do. do.
76—Skillman's Netted Musk Melon.....do. do.
103—Sage.....do. do.
155—Long Cayenne Pepper.....do. do.
156—Summer Savory.....do. do.
157—Long Prickly Cucumber.....do. do.
17—Red Strap-Leaf Turnip.....One half of a 3-cent stamp.
71—Long White French Turnip.....One 3-cent stamp.
107—Giant Asparagus.....do. do.

Flower, Fruit, and Ornamental Seeds.

89—Cotton Plant (2 kinds, mixed).....one 3-cent stamp.
111—Castor Oil Bean (Ornamental).....½ of a 3-cent stamp.

On an average about five of the following varieties will go under a 3-cent stamp.

160—Raspberry Seed.....(for Experiments.)
161—Currant Seed.....do. do.
162—Gooseberry Seed.....do. do.
163—Strawberry Seed.....do. do.
23—Mignonette, (*a.*)
25—Mixed Nasturtium, (*a.*)
27—Extra Cockscomb, (*a.*)
29—DoubleBalsams mix'd(*a*)
30—Tassel Flower, (*a.*)
31—Chinese Pink, (*a.*)
32—Portulaccas, mixed, (*a.*)
33—Cypress Vine, (*a.*)
42—Foxglove, (*b.*)
49—Candytuft, (*a*)
51—Phlox Drummondii, (*a.*)
86—Euphorbia, mixed, (*a.*)
87—Coreopsis, (*a.*)
122—Mixed Canterbury Bells, (*b*)
123—Gilia nivalis, (*a.*)
124—Whitlavia, (*a.*)
126—Long-tubed Centranthus, (*a.*)
164—Sweet scented Ageratum, (*a.*)
165—Cobœa Scandens, (*p.*)
166—Lobelia gracilis, (*a.*)
167—Malope Grandiflora, (*a.*)
168—Swan River Daisy, (*a.*)
169—Clarkia pulchella, (*a.*)
170—Evening primrose, (*b.*)
171—Forget me not, (*p.*)
172—Lunaria biennis, (*b.*)
173—Mixed branching Larkspur, (*a.*)
174—Mixed Pansy, (*p.*)
175—Mixed Salpiglossis (*a.*)
176—Tom Thumb Nasturtium, (*a.*)
177—Ornamental Grass, (*a.*)
178—Lathyrus latifolius, (*p.*)
179—Xeranthemum annum, (*a.*)
180—Centaurea Americana(*a*)
181—Jacob's Ladder, (*p.*)
182—Sweet Alyssum, (*a.*)
183—Mixed French and German Asters, (*a.*)

a, annual—*b*, biennial—*p*, perennial.

Market Review, Weather Notes, etc.

AMERICAN AGRICULTURIST OFFICE,
New-York, Tuesday, February 19, 1861.

Farmers of this country, as a class, are usually little interested in "Foreign News," but their interests are too closely connected with the condition of the breadstuff markets of the old world to allow of any indifference. We have at present a large surplus of wheat and corn, the value of which will materialy depend upon the foreign demand. For some time after our last review the export trade was not encouraging. The prices reported from England did not allow a large margin for profit upon the prices here. There was a scarcity of vessels, and higher rates of freight were demanded. The low rate of exchange made it difficult to sell bills drawn against grain and flour exported, and shippers were frequently unable to pay for new supplies to meet foreign orders received. The home demand was not much above the current receipts by railroad. These circumstances, together with the eagerness of holders of breadstuffs to sell in order to get money to meet their maturing notes, all tended to depress prices. But within a few days past the complexion of the markets has materially changed. The baneful effects of the bad season in Great Britain, both for harvest, and for sowing the crop now in the ground, are becoming more evident. The wheat threshed and brought to market is of a poor quality, and commands a price considerably below good American wheat. The diminished supply of potatoes, owing to the prevalence of the rot, is beginning to be felt. There is a more active inquiry for American flour and grain, and recent arrivals here bring liberal orders at higher rates. Hence we have quite an active demand, both for immediate shipment, and on speculation. Holders are retaining their stocks, as far as possible, with the expectation of large profits; they now refuse offers which would have been eagerly grasped at only ten or twelve days ago. Every dealer here is now looking for a further decided rise in prices. The present prospect is, that the holders of breadstuffs here will soon have full control of the prices, at least until the opening of navigation in Spring. A glance at the present condition of the supply will show that this will be readily accomplished. The cost of transportation of flour and grain by railroad is so much greater than by water, that but moderate supplies can be expected. The total receipts at this port for the month of January were: 121,000 bls. of flour; 167,000 bushels of wheat; 93,000 bushels of corn; 65,000 bushels of oats; 45,000 bushels of barley; and 2,000 bushels of rye; while during the same month we exported 152,000 bbls of flour; 813,000 bushels of wheat; 606,000 bushels of corn; and 13,500 bushels of oats. This reduced the available supplies here on February 1st. to only 325,000 bbls. of flour, and 2,750,000 bushels of wheat—being above a quarter of a million barrels of flour, and three-fourths of a million bushels of wheat, less than the stock on hand January 1st. as reported in the last *Agriculturist*. The receipts since the beginning of this month have been light, in the face of the increased export now going on, so that the present stock must be much reduced. With no serious changes in the political horizon, and a continuance of the present current of trade, prices must go up in this market, and in a measure throughout the country, though New-York prices will be relatively higher, owing to the limited, and not easily increased, stocks available in this port. California sent us by three vessels, which arrived here during the month, about 85,000 bushels wheat, being an unusually large shipment from that young state. The general appearance of this wheat, as far as we have seen it, is decidedly good; the berry is round and plump; skin, fine, and thin; and the color very white indeed. The grain, however, is dry and flinty, and in grinding it flies before the stones, making much more than the usual amount of waste and offal. Hence, it is not in much favor with our local millers. Some of them have been experimenting with it; and we learn from one party that by damping it slightly he succeded in making it pass regularly under the stones, and obtained a fair yield of flour. Some lots have been shipped to England, to try how the Wheat will take in the markets and among the millers of that country. .....As Breadstuffs get into greater request, and prices rise, Cotton seems to suffer. The demand for this staple has been quite limited, although holders have offered to sell freely, and at reduced rates. Just now, there cannot be said to be any market for the article; the few small lots, which are changing hands daily, are not sufficient to establish one; and prices are for the most part, wholly nominal.....Provisions have been unusually dull, and prices have been tending steadily downward. Returns of the Hogs slaughtered and packed, at 138 points in the West, this season, including Cincinnati, Louisville, St. Louis, Chilicothe, Indianapolis, Chicago, and all Tennessee, make the total number 1,675,054, against 1,782,591 to same date last season, showing a decrease of 107,537. The remaining returns, yet to come in, will add to this decrease; but, undoubtedly, the increase in weight will more than make up for the falling off in numbers, as there is a marked increase in the weight of the hogs this season at all the places heard from. In Cincinnati, the average weight of the hogs packed this season has been 221 5-35 lbs. per hog, and the average yield of lard 28 9-16 lbs. per hog. Last season the average weight was only 189 lbs. and the average yield of lard, 23 lbs..... Hay and Hops have met with a regular, but not active demand.....Prices of rice have been reduced, the inquiry having fallen off.....Wool has been more sought after at previous quotations.... Tobacco and Hemp have been quiet.....Clover seed has been in fair request, but at lower figures.....The movements in most other kinds of Produce have been restricted.

CURRENT WHOLESALE PRICES.

	Jan. 18.	Feb. 19.
FLOUR—Superf to ExtraState	$5 20 @ 5 55	$5 10 @ 5 50
Superfine Western	5 20 @ 5 35	5 05 @ 5 20
Extra Western	5 45 @ 7 25	5 25 @ 7 25
Fancy to Extra Genesee	5 60 @ 7 25	5 55 @ 7 25
Super. to Extra Southern	5 80 @ 7 50	5 35 @ 7 25
RYE FLOUR—Fine and Super.	3 30 @ 4 15	3 80 @ 4 10
CORN MEAL	3 10 @ 3 60	3 00 @ 3 40
WHEAT—Canada White	1 45 @ 1 55	1 40 @ 1 55
Western White	1 45 @ 1 57½	1 40 @ 1 57½
Southern White	1 47½@ 1 62½	1 45 @ 1 60
All kinds of Red	1 18 @ 1 38	1 15 @ 1 35
CORN—Yellow	72 @ 75	65 @ 68
White	71 @ 73	68 @ 78
Mixed	69½@ 71	67 @ 68½
OATS—Western	36 @ 37	36 @ 37
State	37 @ 38	37 @ 38
Southern	35 @ 37	38 @ 39
RYE	73 @ 75	65 @ 68
BARLEY	65 @ 80	68 @ 80
HAY, in bales, per 100 lbs	85 @ 1 10	80 @ 1 05
COTTON—Middlings, per lb	12¾@ 12¾	11¾@ 11¾
RICE, per 100 lbs	3 75 @ 4 75	3 25 @ 4 50
HOPS, crop of 1860, per lb	25 @ 32	24 @ 33
PORK—New Mess, per bbl	17 25 @17 50	16 95 @17 00
Prime, new, per bbl	13 12½@13 25	@13 00
BEEF—Repacked mess	8 25 @ 9 75	8 25 @ 9 75
LARD, in bbls., per lb	10¾@ 10¾	9¾@ 10
BUTTER—Western, per lb	10 @ 15	10 @ 14
State, per lb	14 @ 19	14 @ 18
CHEESE	8¾@ 10½	8½@ 11
EGGS—Fresh, per dozen	20 @ 21	15 @ 16
Limed, per doz	19½@ 20	12 @ 13
POULTRY—Fowls, per lb	8 @ 10	10 @ 11
Geese, per lb	7 @ 10	8 @ 9
Ducks, per lb	10 @ 12	10 @ 13
Turkeys, per lb	10 @ 12	11 @ 13
Partridges, ₱ pair	37 @ 50	62 @ 87
FEATHERS, Live Geese, p. lb	40 @ 48	40 @ 45
SEED—Clover, per lb	8¾@ 9	7 @ 7½
Timothy, per bushel	2 62½@ 2 75	2 75 @
SUGAR—Brown, per lb	6 @ 7¾	4¾@ 7
MOLASSES, New-Orleans, p.gl	35 @ 39	30 @ 37½
COFFEE, Rio, per lb	10½@ 13	10½@ 13¾
TOBACCO—Kentucky, &c, p. lb	3 @ 13½	3 @ 13
Seed Leaf, per lb	6 @ 25	6 @ 25
WOOL—Domestic fleece, p. lb	28 @ 55	28 @ 55
Domestic, pulled, per lb	24 @ 42	24 @ 43
HEMP—Undr'd Am., per ton	None selling.	
Dressed American, per ton	215 @235	
TALLOW, per lb	9¾@ 10	9¼@ 9¼
OIL CAKE, per ton	$2 75 @37 50	33 00 @37 00
APPLES, Prime, per bbl	1 75 @ 2 50	1 50 @ 2 25
Medium, ₱ bbl	1 50 @ 1 75	1 25 @ 1 50
Common, per bbl	75 @ 1 25	1 00 @ 1 25
Extra Dessert Apples	2 50 @ 3 00	2 25 @ 3 00
Dried Apples, per lb	3 @ 4	3 @ 4
Dried Peaches, per lb	8 @ 13	8 @ 13
Dried Cherries, pitted, per lb		14 @ 15
POTATOES—Mercers, per bbl	2 50 @ 2 75	2 25 @ 2 50
Peach Blows, ₱ bbl	1 87 @ 2 00	1 87 @ 2 12
ONIONS, Red, per bbl	1 12 @ 1 38	1 13 @ 1 25
White, per bbl	2 00 @ 2 50	2 50 @ 3 00
TURNIPS, per bbl	63 @ 75	50 @ 75
CABBAGES, per 100	3 00 @ 5 00	3 50 @ 5 00
SQUASHES, per bbl	1 00 @ 1 50	1 75 @ 2 00

TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 days *this* month	159,500	255,000	133,400	8,270	73,300	77,000
25 days *last* month	104,670	75,900	57,100	19,150	47,600	89,750
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 days *this* mon.,	363,000	1,625,000	1,380,000	26,900	51,800	
23 days *last* mon.,	315,000	1,500,000	1,422,000	15,750	54,000	

Receipts of Breadstuffs at Chicago, Jan. 1 to Feb. 12.

	1861.	1860.
Flour, bbls	435,670	45,442
Wheat, bushels	783,353	305,327
Corn, bushels	964,549	836,602
Oats, bushels	52,233	152,927
Rye, bushels	48,223	20,705
Barley, bushels	60,173	51,819

The estimated amount of flour, wheat, and corn in store in Chicago, Feb. 12, was as follows:

Flour, bbls	40,538	——
Wheat, bushels	1,335,000	417,000
Corn, bushels	991,700	566,000

N. Y. Live Stock Markets.—THE CATTLE MARKETS have been well supplied for a winter month. Though the receipts, (16,390, for four weeks or 4,097 per week) have been less than the average of last year, they number 350 more than for the corresponding month in 1860. Prices are fully 1½ c. per lb. less than one year ago, and trade is dull. At the last general market, Feb. 13th., with 3,665 beeves on sale, the current rates were 10 c. @ 12 c. per lb., estimated dressed weight, for a few head of choice, fat premium cattle; 9 c. @ 9¼ c. for prime beeves; 7 c. @ 8¼ c. for medium to fair, and 5 c. @ 6½ c. for poor; average of all sales 7¼ c.

VEAL CALVES.—Receipts are always light during the winter, and the demand small, so that the 1,467 for the past month, or 367 per week were sufficient for all wants. Prices continue as last month, viz.: 7 c. per lb. live weight for a very few extras, and 6 c. @ 6¼ c. for good.

SHEEP AND LAMBS.—Receipts usually fall off towards the lambing season in spring. For the past four weeks 29,284 sheep have been received, or 7,321 per week. Prices are the same as last month, but much lower than one year ago. Good sheep command prices equivalent to 5¼ c. @ 5¾ c. per lb. live weight; fair stock about 5 c.

LIVE HOGS.—Receipts are rapidly falling off as spring approaches. For the past month the footings amount to 32,475, or 8,119 per week, against 13,730 per week of the previous month. One year ago they averaged only 2,759 per week. Present prices 5¾ c. @ 6 c. per lb. live weight for corn fed hogs; and 5¼ c. @ 5½ c. for still-fed hogs, with a light demand.

The Weather, has generally been mild for midwinter with but little snow hereabouts, and only few really cold days. There is no snow now on the ground, and hardly frost enough to prevent working of the soil. ——OUR DAILY WEATHER NOTES, condensed, read thus: January 19, cloudy, light rain—20 to 23, clear and cold—24, severe snow storm A.M., rain P.M.; trains blocked on many railroads—25, clear, mild—26, cloudy A.M. snow P.M. making good sleighing—27, clear—28, snow squall morning; clear, warm day—29, snow squall and cloudy A.M., clear and fine P.M.—30, 31, clear, warm.——FEBRUARY 1, clear A.M. cloudy P.M. rain at night—2, fog, light rain—3, cloudy, snow nearly gone—4, 5, cloudy—6, clear—7, changeable, snow, rains, and heavy blow.—8, clear and coldest day of winter, 8° below 0° at day light, and down to 0 all day—9, 10, cloudy A.M., clear P.M., milder—11, cloudy, rain at night—12, rain A.M., clear and warm P.M.—13, 14, clear and fine—15, cloudy, light rain—16, clear, warm A.M. cloudy P.M. with heavy thunder storm at night—17, cooler, passing clouds—18, 19, clear, fine.

P. C. Bluhm sends a daily report of the weather at Sigourney, Keokuk Co., Iowa, a little over one degree north of the latitude of New-York, which shows a wide difference in the temperature. Thus for the month of January the temperature at sunrise averaged there only 9°, while here it averaged 27°. On Jan. 31st, the thermometer stood at 20° above here, and at Sigourney, Iowa, 17° below. Other days show similar marked variations.

John Harwood, of Canton, Washington Co., Indiana, latitude 38½°, sends full reports of the weather for December last, from which it appears that, though 2½ degrees south of New-York, the average temperature for the month, at sunrise, was 7° lower than here—there it was 22°; here 29°.

Thermometer at 6 A. M., New-York.

[Observations carefully made upon a standard Thermometer (Fahrenheit.)—*r* indicates rain, *s*, snow.]

JANUARY.

1	22	8	40	15	33	22	20
2	26	9	32*s*	16	34	23	17
3	24*r*	10	27	17	33	24	25*r*
4	31*s*	11	14*s*	18	30*r*	25	34
5	28	12	22*s*	19	34	26	29*s*
6	28	13	0	20	32	27	25
7	37*r*	14	10*s*	21	26	28	24*s*
29	27*s*						
30	33						
31	20						
Average.	27						

FEBRUARY.

1	20*r*	4	28	7	36*r*
2	42*r*	5	25	8	4 b'w. 0
3	34	6	32	9	4
10	34	11	36	12	46
13	40	14	32	15	36*r*

The Hydropult.

This implement is coming rapidly into favor with the public, and well it may. We described it last Summer (Vol. 19, Aug. No., p. 236), as a simple, convenient apparatus for throwing water, to extinguish incipient fires, for watering gardens, and for washing carriages, windows, etc., as it can be carried in the hand to any desired point, and propels a stream of water 30 to 40 feet, or more, drawing it from a pail, tub, or other convenient vessel, or directly from a cistern. A striking instance of its utility occurred near our residence a short time since. A large Greenhouse, containing many valuable plants, took fire from the heating pipes during the night. The proprietor discovered the fire towards morning, and seizing a Hydropult, which he had just brought home upon our recommendation, and calling out the servant girls to bring pails of water, he was able to to throw on a stream, which kept the fire in check until the village fire engines arrived. The Palace Gardens of this city, which caught fire similarly to the Crystal Palace, were undoubtedly saved by one of these implements, which chanced to be on exhibition. They are recommended by our city fire department, and are being adopted by our public school buildings, etc. In no case, perhaps, are they more useful, than on railroad bridges, since a watchman can carry one of these implements in one hand, and a bucket of water in the other, and in case of fire from the locomotive sparks, throw a stream of water upon any part of the cover over head, or of the piles, or tressel work, underneath. They are also being adopted in smaller villages, where there is no regular fire company. Taking into account its utility not only as a means of extinguishing fires, but also as a water thrower for various purposes, the implement is worthy of a place in every house, where it can be afforded. The cost is $12. To avoid misapprehension, as we shall offer the Hydropult for a premium (see last page), it may be proper for us to say, that we have not the slightest interest in the manufacture or sale of the implement—nor, as for that matter, in any other business, save the publication of this journal. We are, therefore, the more free to speak out independently, *pro* or *con*, concerning any implement, or enterprise, which may be of interest to our readers.

Business Notices.

☞ *Eighty Cents a Line of space.*

Wheeler & Wilson's
SEWING MACHINES
AT REDUCED PRICES,
with Glass-Cloth Presser, Improved Loop-Check, New Style Hemmer, Binder, Corder, etc.
OFFICE No. 505 BROADWAY, NEW-YORK.

"This Machine makes the 'LOCK-STITCH,' and ranks highest, on account of elasticity, permanence, beauty, and general desirableness of the stitching when done, and the wide range of its application."—*Report of American Institute, New-York.*

ITALIAN BEES.

Orders will now be received for these bees to be delivered in the Spring. A circular will be sent to all applicants enclosing a stamp. In it will be found the terms and also reports from Mr. Langstroth, Dr. Kirtland, Mr. Brackett, Mr. Baldridge, and others, testifying fully, from actual observation, to the great superiority of this race over the common bee. S. B. PARSONS, Flushing, N.Y.

The Suffering in Kansas.

Reliable, heart-rending accounts of suffering from destitution in Kansas are daily received in our own correspondence and through the public press. Continued drouth, last summer, destroyed the entire crops throughout whole counties, leaving thousands without food or the means of obtaining any; and, in addition to present want, unless supplied with seed from abroad, the fields must go unplanted this year. The call for aid should be answered at once. When famine reigned in Ireland and Madeira, help was freely given. Let us as promptly respond to the cry of distress from our own countrymen.

Any contributions from the eastern part of the country—clothing, good seeds, etc. may be sent to J. E. Williams, President of Metropolitan Bank, N. Y. City; or, if preferred, to this office, and the contributions will be duly acknowledged and given to the proper committee.

Immense Distribution of Seeds.

Our Seed Distribution is fairly in progress, and is interesting from its great magnitude alone, to say nothing of the advantages to the country from this wide diffusion of choice field, garden and flower seeds, amounting to hundreds of thousands, perhaps not less than half a million of separate parcels this year. These will give the germs of future abundance, and of a still wider diffusion.

So great is the call for seeds this year, that we shall scarcely get up with the daily applications before the 15th or 20th of March. The express parcels, which require more time, and the direct oversight of an experienced packer, will not all be ready before the last of the March.

Our parcels of seeds are small, comparatively, especially of kinds costing $10 to $33 per pound, but they are each large enough to produce an abundance for future use, and in most cases each parcel contains all needed for an ordinary garden plot, or flower-bed.

While the number of parcels offered to each subscriber is limited to four or five, an extra parcel or two will be cheerfully added, when desired by those to whom we are especially indebted for favors—new subscribers, etc.

Purchasing, for Subscribers.

(*See page 61, February No.*)

As announced last month, any subscriber desiring to procure any article not to be found near home, and not knowing where to get it of a reliable dealer, may hereafter send to us and we will aid him so far as is in our power.

As this matter is undertaken merely as an accommodation to our readers, to promote their convenience, and to save them from loss by falling into the hands of unreliable persons, or by purchasing worthless articles, we trust all will see the necessity of remembering that "time is money," especially in a city like this, where competent, reliable assistants are expensive.

Let all requests be as simple and definite as possible. If an article is wanted, describe it particularly, and *in all cases state exactly how it is to be forwarded.*—Send as nearly as possible the exact amount to be paid for it. If not certain on this point, either inquire by letter for the cost, or send enough to cover all expense; and any surplus will be returned with the bill. We can not undertake to send out articles to be paid for on delivery. When a reply is needed, a postage stamp should be enclosed.

Our Exhibition Tables.

Since our last report the following contributions have been made to the *American Agriculturist* exhibition tables.

FRUIT.—Shaddock and Grape fruit—both somewhat resembling the orange—from the West Indies; Robert Sharp, N. Y.....Mammoth apples and pears, from Linn Co., Oregon; Nelson C. Warner.....Harrison Golden Pippins; W. S. Carpenter, N. Y.....“Iron” apples, noted for long keeping, and continuous bearing; G. M. Usher, Richmond Co., N. Y.....Jewett apples—fine; L. W. Spalding, Worcester Co., Mass.....

VEGETABLES, ETC.—Yellow Stone turnip—curious growth, somewhat resembling a hand; D. Mapes, Westchester Co., N. Y.....Scrub Oak turnips; W. J. Spence, Suffolk Co., L. I.....London Particular globe onions, fine samples, raised from *Agriculturist* seed; W. Oliff, Richmond Co., N. Y.....Hubbard Squashes; S. B. Conover, Washington Market, N. Y.....Winter Cherries; Jas. H. Foster, N. Y.....Turban Squash; John A. Sorg, Erie Co., N. Y.....Specimens of hybridized corn; W. S. Carpenter, N. Y.....Miniature corn, the smallest we have seen; M. W. Phillips, Hinds Co., Miss.....

MISCELLANEOUS.—Seed cone of Pinus Lambertiana, large and handsome, Miss. Julia M. Fitch, Yuba Co., Cal.....Natural Hygrometer, seed of Erodium *ciconium*; very curious; John Kerler, Milwaukee Co., Wis.....Japanese umbrella, made of waterproof paper, of beautiful workmanship; W. C. Carpenter, N. Y.....Husking pin, neatly made of bone; John G. Hale, Erie Co., O.....Two beautiful owls, small species, one from J. S. Bode, N. Y., one from W. H. Ranlett, N. Y.; also another eagle, and a long-eared owl, purchased by the proprietor.

Advertisements.

Advertisements to be sure of insertion must be received at latest by the 15th of the preceding month.

TERMS—(invariably cash before insertion):

FOR THE ENGLISH EDITION ONLY.
Fifty cents per line of *space* for each insertion.
One whole column (145 lines), or more, $60 per column.
☞ Business Notices, *Eighty cents* per line of space.

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Ten cents per line of *space* for each insertion.
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FOR BOTH EDITIONS, ENGLISH AND GERMAN.
Fifty five cents per line; $65 per column.
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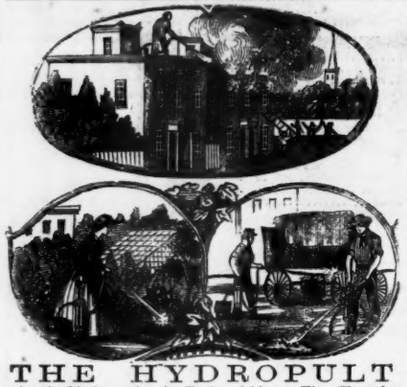

THE HYDROPULT

an invaluable invention for Extinguishing a Fire, Cleansing Trees from Insects, Watering Gardens, Protecting a Roof from Taking Fire, Washing Windows, Sprinkling Streets, Washing Carriages, Wetting Sails, &c. Every Farmer, Gardener, and Housekeeper should have it. Price $12. For sale wholesale and retail by the

AMERICAN HYDROPULT COMPANY,
151 Nassau-st., New-York.

THE BEST THING I EVER HEARD OF—25 cents worth of the Russia Waterproof will save $5 in boots and shoes. Depot 297 Pearl-st., N. Y. W. C. GRAY.

Select List of STRAWBERRIES.

TEN VARIETIES AND 1000 PLANTS FOR $10.

For $10 we will furnish 100 plants each of the following choice kinds: TRIOMPHE DE GAND, TROLLOPE'S VICTORIA, VICOMTESSE HERICART DE THURY, FILLMORE, BRITISH QUEEN, BURR'S NEW PINE, JENNY LIND, HOOKER, McAVOY'S SUPERIOR, and WILSON'S ALBANY.

FIVE VARIETIES AND 500 PLANTS FOR $5.

For $5 we will furnish 100 plants each, of the following kinds: TRIOMPHE DE GAND, TROLLOPE'S VICTORIA, BURR'S NEW PINE, JENNY LIND, and WILSON'S ALBANY.

STRAWBERRY PLANTS BY MAIL.

For $1 we will send to any Post Office address in the country, post-paid, and carefully put up in cotton and oiled silk, so as to carry safely, 25 good plants of the WILSON'S ALBANY. We will send, for the same price, the same number of plants (25), of any variety offered in our catalogue, at 25 c. per doz.

For $1 we will send 20 plants of the TRIOMPHE DE GAND, or any other variety we offer at 50 cents per dozen. No order filled of plants by mail, for less than one dollar's worth, of any one kind.

RASPBERRIES.

Our stock of plants is very large and fine. We have over twenty varieties, including BRINCKLE'S ORANGE, at $1.00 per dozen; $5.00 per 100; FRANCONIA, at 75 cents per dozen; 4.00 per 100; FASTOLFF, RIVER'S LARGE FRUITED MONTHLY, KNEVETT'S GIANT, HUDSON RIVER ANTWERP, RED AND YELLOW ANTWERP, and others, at 75 cents per dozen; $3.00 per 100; IMPROVED AMERICAN BLACK CAP, 50 cents per doz.; $3.00 per 100.

Persons wanting large quantities of the above, will be furnished at very low rates.

SELECT LIST OF RASPBERRIES.

For $10 we will furnish 100 BRINCKLE'S ORANGE, the finest flavored Raspberry, as well as one of the largest, most beautiful, and productive.

100 FRANCONIA, a very large red berry, of good flavor, attractive, and enormously productive.

100 IMPROVED AMERICAN BLACK CAP; much larger, more juicy, better flavored, with fewer seed, and every way superior to the common Black Cap. The plant is entirely hardy and very productive, and the fruit is much sought after in the market.

The above kinds include the three colors—orange, red, and black—and furnish a pleasant variety in flavor. We regard them as the best for amateurs, and the most profitable for market culture.

BLACKBERRIES.

NEW-ROCHELLE.....$1.00 per dozen; $5.00 per 100.
DORCHESTER.....75 cts. do. 4.00 do.
NEWMAN'S THORNLESS.....75 cts. do. 3.00 do.

For $10 we will send 100 of each of the above kinds.

We have fruited these varieties for five years, and having ten acres in cultivation, we are prepared to furnish wholesale purchasers at lowest rates.

LOGAN GRAPE VINES.

Having procured a supply of the above early and valuable Grape, of A. Thomson, of Delaware, O., we will furnish good, well-rooted vines, at 75 cents each—$7.00 per dozen; or by mail, securely put up, and postage paid, $1.00 each.

J. KNOX, Lock Box 155, Pittsburgh, Pa.

Strawberries! Strawberries!

"By their fruits ye shall know them."

What Strawberry shall I plant? Why! the Wilson's Albany.—Why? Because it is the most productive, the largest, and finest berry out. In fact it is the "fashionable" berry.

Originated at the Albany Nursery, where plants can be procured by addressing JOHN WILSON, Albany, N. Y.

Price per 100 plants.....$1
do. 1000 do.....$8
Liberal discount to the trade.

FARM PRODUCE
SOLD ON COMMISSION,

Such as Flour, Butter, Cheese, Lard, Provisions of all kinds, Grain, Eggs, Poultry, Game, &c., &c.
ISAAC EMENS, 226 FRONT-ST., NEW-YORK.
SUCCESSOR TO THE FIRM OF HAIGHT & EMENS.
Refers to the Editor American Agriculturist.
" E. R. Cooper, Cashier, Market Bank, New-York.

New Cuyahoga Grapes.

Send a stamp for our Illustrated and Descriptive Catalogue of over 80 sorts of New Grapes; also Raspberries: Currants; Gooseberries, &c. Also Roses and Flowering Shrubs.
C. P. BISSELL & SALTER, Rochester, N. Y.

GRAPE CUTTINGS.—Concord, Diana, and Hartford Prolific Grape Cuttings, from bearing vines, (*warranted true,*) at $2 per 100, or $15 per 1000 eyes; also cuttings of Delaware, Anna, Ontario, Logan, and Union Village at $4 per 100, or $30 per 1000 eyes. For sale by
JOHN B. GOOD, Nurseryman, York, Pa.

100 Varieties of Native Grape Roots, strong and cheap. Fruit and Ornamental Trees, Flowering Shrubs, Roses, Small Fruits, &c. Catalogues mailed free to all applicants, with a beautiful cut of the Concord Grape.
Address W. C. LOOMIS, Lowell, Oneida Co., N. Y.

HUBBARD SQUASH.

I have received from the Mass. Horticultural Society a piece of Silver Plate as ORIGINAL INTRODUCER of this celebrated Squash. A package of about 50 seeds of the purest quality grown, WARRANTED to reach each purchaser, 15 cts. Four packages, 50 cts. JAMES J. H. GREGORY,
Marblehead, Mass.

HONOLULU CITRON SQUASH.—18 SEEDS of this best of all squashes sent to any address on receipt of four three cent stamps. For five stamps a package of pure Hubbard also. J. A. LEWIS, Nurseryman,
Willimantic, Conn.

CARROT, BEET, AND TURNIP SEEDS, of the various kinds, of extra quality, for sale by J. E. MACOMBER, Wholesale Seed Grower, Portsmouth, R. I.

IMPROVED AMERICAN BLACK CAP RASPBERRY, 50 cents per dozen; $3.00 per 100; $25.00 per 1000.
J. KNOX, Pittsburgh, Pa.

Premium Seed Corn for Sale.

Improved King Philip. The most productive corn in cultivation. 141½ bush. was raised to the acre last year in this State, ripening in a little over 100 days.

Prolific Golden Drop. The most productive and beautiful yellow corn grown; this corn is very heavy, weighing 62 lbs. to the bushel. A bushel of ears will produce 17 quarts of shelled corn. It ripens in 110 days; ears very large, 8-rowed.

Improved Crystal Flint. A beautiful 12-rowed white corn, producing two and three ears to the stalk, very productive; ears large, and ripening very early.

The above are selected from 25 varieties, grown by me in 1859, and can be recommended to farmers.

Price. Improved King Philip Corn, per bush. $2.50; per peck 75c. Prolific Golden Drop and Improved Crystal Flint, $3 per bushel; $1 per peck.

All orders addressed to W. S. CARPENTER, 468 Pearl-st., New-York.

FRANCONIA RASPBERRY PLANTS, $1.00 per dozen; $4.00 per 100; $35.00 per 1000.
J. KNOX, Pittsburgh, Pa.

EVERGREENS.—JOHN W. ADAMS, Portland, Maine, continues to furnish ARBOR VITÆ and other EVERGREEN Trees at low prices, properly taken up and packed. Catalogues ready.

BRINCKLE'S ORANGE RASPBERRY PLANTS, $1 per dozen, $5.00 per 100; $40 per 1000. Wholesale purchasers furnished at low rates.
J. KNOX, Box 155, Pittsburgh, Pa.

Bloomington Nursery, Illinois.

At Junction Ill. Central [Dubuque and Cairo] and St. Louis, Alton and Chicago Railroads. Established 1852. 120 acres Fruit, Ornamental, and Nursery Stock, a very general and reliable assortment, cheap for Cash. Particular attention invited to the splendid stock and assortment of *One Year Apple Grafts*, mostly 2 to 3 feet, 1000, $25. Also *Root Grafts*, 10,000 $50, for our ordinary and we may add, unusually successful quality [from which above named fine 1 year olds.] Root Grafts, extra strong, [to order only,] 10,000 $75. Dwarf Fruit, choice *Currants* and *Grapes*, many sorts. *Mulberry*, Downing's Everbearing, $16 per doz. *Gooseberry, Blackberry, Raspberry*, 1000 $15 to $40. *Strawberry*, including Wilson's and both McAvoy's, 1000 $5. *Asparagus*, strong, 3 year, 1000 $5. *Rhubarb*, including Linnæus and Victoria, *true*, 1000 $30 to $60. Apple Stocks, good, 2d size for budding, 10,000 $15. Quince, Pear, Plum, Mahaleb, and Rose Stocks. *Apple Seeds, Shade* and *Weeping Trees, Roses, Shrubs*, and *Bulbs*, a superb stock. *Evergreens*, Nursery grown, several sorts, 1000 $10. Packing carefully done. See Catalogues. Address, Bloomington, Ill. F. K. PHŒNIX.

TRIOMPHE DE GAND STRAWBERRY PLANTS, the best and most profitable; 50 cents per dozen; $1.50 per 100; $10 per 1000. Dealers furnished at greatly reduced prices.
J. KNOX, Pittsburgh, Pa.

PASCHALL MORRIS' DESCRIPTIVE SEED CATALOGUE, ALMANAC AND GARDEN MANUAL for 1861, with complete lists of vegetables, Directions for Culture, and other information of importance to the Farmer and Gardener, forwarded by mail on remission of stamp.
Also illustrated implement and Nursery Catalogues.
PASCHALL MORRIS, Agricultural and Seed Warehouse, 1120 Market-st., Philadelphia, Pa.

FILLMORE STRAWBERRY PLANTS, 50 cents per dozen; $2.00 per 100; $15.00 per 1000.
J. KNOX, Pittsburgh, Pa.

Great Austin Shaker Strawberry.

The price of this mammoth variety will be reduced this Spring to $2 per dozen, or $10 per hundred. Delivered in rotation as ordered. The Great Austin was exhibited last year in Boston, New-York, Philadelphia, Rochester, and Albany, and acknowledged to be the most beautiful, and to average the largest and most productive of any other strawberry in cultivation. Orders addressed to either
CHAUNCY MILLER, Shaker Trustee, Albany, N. Y., or
WM. S. CARPENTER, 468 Pearl-st., New-York.

WILSON'S ALBANY STRAWBERRY PLANTS, 25 cents per dozen; $1.00 per 100; $5 per 1000.
J. KNOX, Box 155, Pittsburgh, Pa.

Homes for the Industrious!

— IN THE —

GARDEN STATE OF THE WEST.

THE ILLINOIS CENTRAL RAILROAD CO., HAVE FOR SALE

1,200,000 ACRES OF RICH FARMING LANDS,

In Tracts of Forty Acres and upward, on Long Credit and at Low Prices.

MECHANICS, FARMERS & WORKING MEN.

THE attention of the enterprising and industrious portion of the community is directed to the following statements and liberal inducements offered them by the

ILLINOIS CENTRAL RAILROAD COMPANY.

which, as they will perceive, will enable them, by proper energy, perseverance and industry, to provide comfortable homes for themselves and families, with comparatively speaking, very little capital.

LANDS OF ILLINOIS.

No State in the Valley of the Mississippi offers so great an inducement to the settler as the State of Illinois. There is no portion of the world where all the conditions of climate and soil so admirably combine to produce those two great staples, CORN and WHEAT, as the Prairies of Illinois.

THE SOUTHERN PART

Of the State lies within the zone of the Cotton regions, while the soil is admirably adapted to the growth of Tobacco and Hemp, and the Wheat is worth from 15 to 20 cts. more per bushel than that raised further north.

RICH ROLLING PRAIRIE LANDS.

The deep rich loam of the prairies is cultivated with such wonderful facility that the farmers of the Eastern and Middle States are moving to Illinois in great numbers. The area of Illinois is about equal to that of England, and the soil is so rich that it will support twenty millions of people.

EASTERN AND SOUTHERN MARKETS.

These lands are contiguous to a railroad 700 miles in length, which connects with other roads and navigable lakes and rivers, thus affording an unbroken communication with the Eastern and Southern markets.

APPLICATION OF CAPITAL.

Thus far, capital and labor have been applied to developing the soil; the great resources of the State in coal and iron are almost untouched. The invariable rule that the mechanic arts flourish best where food and fuel are cheapest, will follow at an early day in Illinois, and in the course of the next ten years the natural laws and necessities of the case warrant the belief that at least five hundred thousand people will be engaged in the State of Illinois in various manufacturing employments.

RAILROAD SYSTEM OF ILLINOIS.

Over $100,000,000 of private capital have been expended on the railroad system of Illinois. Inasmuch as part of the income from several of these works, with a valuable public fund in lands, go to diminish the State expenses; the TAXES ARE LIGHT, and must consequently every day decrease.

THE STATE DEBT.

The State debt is only $10,105,398 14, *and within the last three years has been reduced* $2,959,746 80, *and we may reasonably expect that in ten years it will become extinct.*

PRESENT POPULATION.

The State is rapidly filing up with population; 868,025 persons having been added since 1850, making the present population 1,723,663, a ratio of 102 per cent. in ten years.

AGRICULTURAL PRODUCTS.

The Agricultural Products of Illinois are greater than those of any other State. The products sent out during the past year exceeded 1,500,000 tons. The wheat crop of 1860 approaches 35,000,000 bushels, while the corn crop yields not less than 140,000,000 bushels.

FERTILITY OF THE SOIL.

Nowhere can the industrious farmer secure such immediate results for his labor as upon these prairie soils, they being composed of a deep rich loam, the fertility of which, is unsurpassed by any on the globe.

TO ACTUAL CULTIVATORS.

Since 1854, *the Company have sold* 1,300,000 *acres. They sell only to actual cultivators, and every contract contains an agreement to cultivate. The road has been constructed through these lands at an expense of* $30,000,000. *In* 1850 *the population of forty-nine counties, through which it passes, was only* 335,598 *since which* 479,293 *have been added; making the whole population* 814,891, *a gain of* 143 *per cent.*

EVIDENCES OF PROSPERITY.

As an evidence of the thrift of the people, it may be stated that 600,000 tons of freight, including 8,600,000 bushels of grain, and 250,000 barrels of flour were forwarded over the line last year.

EDUCATION.

Mechanics and workingmen will find the free school system encouraged by the State and endowed with a large revenue for the support of schools. Their children can live in sight of the church and schoolhouses, and grow up with the prosperity of the leading State in the Great Western Empire.

PRICES AND TERMS OF PAYMENT.

The prices of these lands vary from $6 to $25 per acre, according to location, quality, &c. First class farming lands sell for about $10 to $12 per acre; and the relative expense of subduing prairie land as compared with wood land is in the ratio of 1 to 10 in favor of the former. The terms of sale for the bulk of these lands will be

ONE YEAR'S INTEREST IN ADVANCE,

at six per cent. per annum, and six interest notes at six per cent., payable respectively in one, two, three, four, five and six years from date of sale; and four notes for principal, payable in four, five, six and seven years from date of sale; the contract stipulating that one-tenth of the tract purchased shall be fenced and cultivated, each and every year, for five years from date of sale, so that at the end of five years one-half shall be fenced and under cultivation.

TWENTY PER CENT. WILL BE DEDUCTED

from the valuation for cash, except the same should be at six dollars per acre, when the cash price will be five dollars.

Pamphlets descriptive of the lands, soil, climate, productions, prices, and terms of payment, can be had on application to

J. W. FOSTER, Land Commissioner,
CHICAGO, ILLINOIS.

For the names of the Towns, Villages, and Cities situated upon the Illinois Cent. R. R., see pages 188, 189 & 190, APPLETON'S RAILWAY GUIDE.

TO TREE PLANTERS.

PARSONS & CO.

Offer their fine stock of

FRUIT TREES

of as good quality as can be elsewhere procured, and at low prices.

APPLE TREES	$14 per 100.
CHERRY TREES	16 "
PLUM TREES	32 "
DWARF PEARS	25 "
STANDARD PEARS	30 "
DELAWARE GRAPE VINES	50 "

The other

FOREIGN AND NATIVE GRAPES

at moderate rates.

DWARF PEACH TREES

pruned for immediate bearing in POTS, and in the open ground, at low rates.

VERSAILLES and other CURRANTS in quantity, as well as BLACKBERRIES, RASPBERRIES, STRAWBERRIES, and GOOSEBERRIES.

PEAR STOCKS and CHERRY STOCKS of fine quality.

For Catalogues apply at No. 3 Nassau-st., New-York, or by mail to PARSONS & CO.,
Flushing, near New-York.

FRUIT AND ORNAMENTAL TREES,

For Spring of 1861.

ELLWANGER & BARRY

solicit the attention of Planters, Nurserymen, Dealers and others, to their large and fine stock which they now offer at wholesale and retail, at low prices. It embraces

STANDARD FRUIT TREES, for Orchards.
DWARF FRUIT TREES, for Gardens.
DWARF MAIDEN TREES, (yearlings,) for Orchard house culture, of all the finest varieties. Selections made by E. & B, for that purpose.
HARDY GRAPES, New and Old.
FOREIGN GRAPES, for Vineries, all the best.
STRAWBERRIES, 50 varieties, the best Native and Foreign.
BLACKBERRIES, New Rochelle and Dorchester.
RASPBERRIES, all of the most popular varieties, including six of the best Autumnal bearing sorts.
GOOSEBERRIES, American and English.
CURRANTS, twenty best varieties.
FILBERTS, CHESTNUTS, WALNUTS, AND PIGS.
RHUBARB, Myatt's Linnæus and other fine sorts.

ORNAMENTAL DEPARTMENT.

The Stock in this department is the largest and best we have ever before offered, and embraces every thing desirable, new and old, among

DECIDUOUS ORNAMENTAL TREES,

EVERGREEN TREES,	PÆONIES,
FLOWERING SHRUBS,	DAHLIAS,
ROSES,	PHLOXES,

BORDER PLANTS.

BULBOUS ROOTS, Summer and Autumn Flowering, including Amaryllis, Gladiolus, Tuberose, Tigridia, Tritonia Aurea, Colchicum, Japan Lilies, the finest new varieties, and all the other desirable species.

GREEN-HOUSE AND BEDDING-OUT PLANTS, of all the popular classes, grown extensively and sold cheap.

SUPERB NEW PETUNIAS.

Twelve new varieties of Petunias, which we think superior to any in cultivation, will be ready to go out May 1st.—$4 for the 12—names and descriptions furnished on application.

STOCKS FOR NURSERYMEN.

PEAR SEEDLINGS, our own growth, 1 and 2 years.

For full and detailed information respecting the stock, prices, terms, &c., we refer to the following Catalogues, which will be sent gratis, pre-paid, to all who inclose one stamp for each.

No. 1.—Descriptive Catalogue of Fruits.
No. 2.—Descriptive Catalogue of Ornamental Trees, Shrubs, Roses, &c., &c.
No. 3.—Descriptive Catalogue of Dahlias, Green-House and Bedding Plants, &c.
No. 4.—Wholesale Catalogue for Nurserymen, Dealers and others, who purchase in large quantities.

ELLWANGER & BARRY,
Mount Hope Nurseries, Rochester, N. Y.

EVERGREEN NURSERY.
Woodbury, New-Jersey.
DAVID J. GRISCOM, Proprietor.

☞ The attention of persons stocking or replenishing nurseries, or having extensive grounds to improve, is particularly invited.

15,000 Extra No. 1 Peach Trees at a great BARGAIN to clear a piece of ground. Send for a circular. WM. DAY, Morristown, N. J.

FOR SALE. — LARGE STANDARD PEAR Trees of the choicest varieties; also, Plum, Cherry, and Apple Trees, and many kinds of Shrubbery, &c., &c.; at our Nurseries in Tioga, Tioga Co., Pennsylvania.
Tioga, Sept. 26, 1860. WICKHAM & BLOODGOOD.

500,000 AMERICAN ARBOR VITÆ from 6 to 12 inch. high, for sale at $5 per thousand, by ALBION P. CHAPMAN, Portland Maine.

ORNAMENTAL PLANTING

will commence this month.

PARSONS & CO.

are prepared with every variety generally required, whether for

THE GARDEN, THE LAWN, OR THE AVENUE.

Our STREET TREES are of very fine size and quality, and our SHRUBS embrace all the novelties, as well as those needed in quantity for massing.

Among the EVERGREENS we now cultivate 92 varieties of Spruce, 30 of Pine, 21 of Fir, 41 of Juniper, 24 of Yews, 20 of Arbor Vitæ, 64 of Rhododendron, besides a smaller number of species of many other genera, amounting in all to 294 varieties.

In our Greenhouses is a large stock, embracing the new and rare FOLIAGED PLANTS as well as an extensive assortment of the

NEW BEDDING PLANTS.

For Catalogues apply to us at
FLUSHING, near New-York.

FLOWER SEEDS. FLOWER SEEDS.

After cultivating over one thousand varieties of Flower Seeds, I have selected about one hundred kinds of the most hardy, showy, and attractive, of which I will furnish, neatly put up, any 33 kinds on the list for $1, and send by mail with postage prepaid. Send for a Catalogue.

G. R. GARRETSON, Flushing, N. Y.

Garden Seeds. Garden Seeds.

The subscriber is extensively engaged in raising all kinds of Garden Seeds, having nearly 100 acres under cultivation for that purpose. They can be furnished in any quantity, and of the choicest quality. A new retail Catalogue at greatly reduced prices, and containing directions for cultivation, is just published, and will be sent to all applicants.

G. R. GARRETSON, Flushing, N. Y.

Flower Seeds by Mail.

Considerable experience in selecting enables us to make up collections which are invariably satisfactory to purchasers, and our unusually full assortment the present season, embracing every desirable novelty and standard sort, either raised here, or imported from the most reliable Floral Seeds Growers in Europe, insures assortments of the rarer sorts and finest qualities, all of the growth of the past season, and *true to name.*

COLLECTIONS OF

100	Varieties of Annuals, Biennials, and Perennials, for		$4 00
50	do.	do. do.	2 00
25	do.	Annuals	1 00
10	do.	do.	50
20	do.	New and Rare Annuals	2 00
20	do.	Choice Green House Seeds	2 50
40	do.	do. do. do.	5 00
20	do.	American Seeds, for European Culture	2 00

STRICTLY OUR OWN SELECTION.

The above will be mailed post-paid on receipt of the amount annexed. J. M. THORBURN & CO.,
15 John-st., New-York,

N. B. **Tree Seed Notice!!**

Owing to late arrivals of many of our Foreign sorts, the Catalogue of Tree Seeds will not be ready till the middle of March; we, however, have several hundred varieties now in store, all of the growth of 1860, and at low rates.

Seeds! Seeds! Seeds!

Garden, Vegetable, Grass and Flower Seeds

OF EVERY DESIRABLE VARIETY.

Descriptive priced Catalogues No. 1 and No. 2 for private, or family use; and No. 8 Trade list, forwarded on application.
ALFRED BRIDGEMAN,
No. 876 Broadway, New-York.

Choice Vegetable Seeds by Mail.

The following varieties will be mailed to any address in the Union on receipt of the price affixed, which may be remitted in postage stamps or current bills.

50	Seeds Hubbard Squash	15c.
20	do. Honolulu do.	15c.
50	do. Boston Marrow, pure	15c.
50	do. Japan Apple Pie Melon	15c.
100	do. Perfection Tomato (Pomme d'oro Lesteriano)	15c.
1	Packet Early Paris Cauliflower (the best in Cultivation)	25c.
1	do. Marblehead Mammoth Cabbage (Gregory's)	25c.
¼	oz. Stone Mason Cabbage do.	15c.
¼	oz. Premium Flat Dutch Cabbage	15c.
1	Packet Lee's New Sprouting Broccoli (a new English variety)	50c.
1	oz. Yellow Danvers Onion (the best variety)	25c.

The entire collection will be sent by mail, pre-paid, for $2. Cash must always accompany the order.

The above may all be relied upon as the very best of their kinds in cultivation. Address B. K. BLISS,
Springfield, Mass.

GARDEN SEEDS.

I have now in store a full assortment of GARDEN, FIELD, and FLOWER SEEDS, among which will be found all the varieties of Beans, Beet, Cabbage, CARROT, (all American growth.)

CORN—Extra Early Dwarf Sweet, Early Burlington, &c., Cucumber, Lettuce, Melons, Onion, Parsnip.

PEAS—Princess, Lord Raglan, Eppe Monarch, Champion of Scotland, Dwarf Green Marrow, Daniel O'Rourke, Competitor, Champion of England, all fine varieties.

TOMATOES—Fejee Island, very solid and extra fine, and all other varieties.

TURNIP—American growth and of extra quality. Radish, Asparagus, Spinach, Squash, Salsify, Rhubarb, Rape, Parsley, Artichoke, Broccoli, Cauliflower, Celery, Cress, Corn Salad, Leek, Endive, Kale, Chervil, Collards or Colewort, Brussels Sprouts, Okra, Nasturtium, Mustard, Egg Plant, Pumpkin, Pepper, Scorzonera Mushroom, Herbs, &c.

TREE and SHRUB SEEDS of all kinds.

FRUIT SEEDS—Apple, Pear, Quince, Apricot, Blackberry, Cherry, Currant, Gooseberry, Peach, Grape, Nectarine, Raspberry, Strawberry, &c.

BIRD SEEDS—Canary, Hemp, Rape, and Millet.

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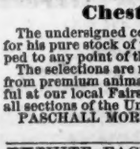

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